Playing Games Together: Play Interventions for Community and Communal Play

A Thesis submitted for the degree of Doctor of Philosophy (PhD)

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Declarations

Candidate's declarations:

I, Lynn Love (Parker), hereby certify that this thesis submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy (PhD), Abertay University, is wholly my own work unless otherwise referenced or acknowledged. This work has not been submitted for any other qualification at any other academic institution.

Signed: 

Date: 06/03/2018

Supervisor's declaration:

I, Gregor White, hereby certify that the candidate has fulfilled the conditions of the Resolution and Regulations appropriate for the degree of Doctor of Philosophy (PhD) in Abertay University and that the candidate is qualified to submit this thesis in application for that degree.

Signed: 

Date: 06/03/2018

Certificate of Approval

I certify that this is a true and accurate version of the thesis approved by the examiners, and that all relevant ordinance regulations have been fulfilled.

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Abstract

This thesis is concerned with play, particularly the role of social play in a co-located context and its ability to bring people together. Participation in social play can have significant effects on an individual, group, community and culture, and thus, through practice-based research, this thesis documents the exploration of the design of "playful interventions" which may be artefacts or events which seek to bring people together through play. In play, individuals form shared meanings, understanding and values, as determined by the rules of the play situation. In the play experience, they become temporary communities, who, through play, can experiment, explore and redefine their relationships with one another, the play context and potentially the world beyond. The experimental nature of play leads it to be naturally imbued with transformative potential for everyone involved; whether that be small in scale, such as forming a new way of looking at a space through playing within it, or on a larger scale, through forming new concepts around a local area or governmental policy.

Play is, however, very unpredictable, being led by player interaction, and always pushes up against the rules of the play situation. In play, the particular output (if there is one) is never certain, and no two play experiences will be the same. This unpredictability means that its transformational power is always a potential but never guaranteed. Designers, when working with play as a medium must embrace this unpredictability and explore approaches to design playful experiences which are satisfying in themselves for the participants whilst also trying to find methods to unlock the potential for individual (and group) transformation through play.

The thesis is a narrative account of sustained academic research, based upon eight academic publications and practice works, produced between 2013 and 2018. Six of these publications document practical exploration of the creation of playful interventions, in the form of video games, performances and events. Two further publications explore design approaches to enhance participation drawing from expert interview analysis and theoretical engagement with institutional approaches to promotion of participation in the museum and gallery. The body of work thus explores the design of participation from two perspectives: the artist/designer of an

artefact and as a “context provider” who designs events and spaces within which play, and participation can take place amongst participants.

Within this thesis, the body of publications are contextualised in relation to theories of play, game design and art practice and also drawing from theories around communities of practice and communities of play. A series of expert practitioner interviews underpin both the academic and practical framing of this research, drawing from key practitioners in the UK and Europe working in play, game design, event curation and community work.

The thesis formalises the design methods used to create playful interventions by the author and expert practitioners in the field of social play as presented both across the academic publications and within interview content. The formalisation of these design techniques is presented as two social play frameworks, one for designing participation around artefacts and one which focusses upon designing participation around events. Each framework aims to aid a designer and/or context provider in helping participants to unlock the unpredictable yet transformative potential of play as individuals and as communities whilst acknowledging the complex interrelations which occur in designed social contexts.

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Definitions and Acronyms

A MAZE.	A MAZE. A MAZE. / Berlin and A MAZE. / Johannesburg are festivals of interactive and playful media led by Thorsten S. Wiedemann, which bring together artists, games developers and the general public to explore game play and making practices over a series of days.
Arcadia	Arcadia is a one-day festival of independent games, organised by Malath Abbas, which mixes talks, workshops and social play, hosted in Dundee, UK.
Ceilidh	A traditional social dance made up of live music, partner and large group dancing and a convivial atmosphere, often seen in Ireland and Scotland, with links to barn dances and social dances in other cultures.
Counterplay	Counterplay is a three-day festival of play, organised by Mathias Poulsen, which mixes talks, workshops, freeform play and reflection.
CP	Curious Pastimes, an organisation which runs fantasy live action role playing festivals four times a year.
DtbD	Dare to be Digital, an international games competition for students, hosted by Abertay University from 2000 until 2016 in the Summer Months.
Feral Vector	Feral Vector is a three-day alternative games festival organised by David Hayward which mixes physical and digital social play of games, workshops, talks and LARP, hosted each year in Hebden Bridge.
FFN	Forever Falling Nowhere, a promenade hybrid performance which combined dance and animation and is discussed in publication C.
GAFE	Games are for Everyone, a play party event hosted by the organisation, We Throw Switches twice a year in Edinburgh.
GGJ	Global Game Jam, a yearly game development event which runs for 48-hours.
IGDA	The International Game Developers Association, a global network which aims to connect game development communities and projects around the world.
JS Joust	Johann Sebastian Joust, a digitally mediated physical performative game made by Die Gute Fabrick (2013).

LARP	Live action role playing, where participants embed themselves in the world of role-playing games.
Now Play This	Now Play This is a three-day festival, organised by Holly Gramazio and the team from Matheson Marcault. It mixes games exhibition, series of workshops and talks exploring play as an expressive form hosted in London, UK each year.
NLC	The Northern Lights Ceilidh, a digital mediated participative dance event designed and discussed in publication H.
ODLV	Ola De La Vida, a social play game designed and discussed in Publication G.
Playbox	Playbox is a social business and developing network of shipping containers which seek to use play as a way of bringing people together and empowering communities. It was started in Leeds by Emma Bearman.
Talk & Play	Talk & Play is a bi-monthly meet up in Berlin, organised by Lorenzo Pilia, which mixes developer talks and the social play of video games in order to enhance the local community around games.

Chapter 1: Introduction

The purpose of this chapter is to provide an overview and context for the body of research presented within this thesis. The chapter begins with an outline of the approach to the thesis, which introduces the research topic, playful intervention participation design, the underpinning publications and their contextual framing. The research question is also presented, alongside a contextual literature background which positions this research in the larger context of social play and participation. The chapter concludes with reflection upon the contribution made by the research presented within this thesis.

1.1 A Playful Approach: Outline of the Approach to the Thesis

This PhD by Publication thesis builds upon an existing body of academic publications which demonstrate sustained exploration into the design of participation. The publications are presented as a foundation of knowledge from which this thesis draws conclusions regarding the design of participation in social "playful interventions," events and artefacts which use participation in social play to empower participants. Designing for participation in play is deemed important in order to invite people to take part in the play activity and potentially unlock the transformative qualities inherent in all play.

This research is approached from an arts and design perspective and does not aim to design persuasive participation in social play towards a specific thematic goal (i.e. behaviour transformation). Instead, the thesis aims to firstly formalise the design techniques which can enhance playful participation in and of itself and secondly, evaluate their success in helping participants as individuals and as a collective to unlock new perspectives and behaviours through the transformative qualities of play. The research is interested in transformation driven by participants, where they, through participation, identify and address issues for themselves or collectively as a form of play community.

The body of publications which contribute to this research document theoretical and practice-based research relating to playful intervention design. The publications approach participation

design from two perspectives: that of an artist creating a participative artefact and that of "context provider" (Dunn, no date, cited in Kester, 2004, p.1) an individual who designs events, interventions and spaces for participation and exchange. In the practice-based works, playful interventions are bounded in time and space, and as such, the research questions focus on the design and impact of participation in bounded or temporary play situations and communities. The research also focuses specifically upon co-located contexts, where participants interact with the playful intervention in the same place. Such co-location allows the designer or context provider to design the intervention, whilst also influencing the effect of the play space and context (to varying extents) upon participation.

The publications are supported by a literature review which acts as background from which the knowledge embedded within publications can be evaluated. The background provides contextual positioning for the design of playful participation within the academic landscape of social play and also draws from participatory theories in arts, education and games literature. This grounding is complemented by expert practitioner interviews conducted in relation to the key research questions. The outcomes of the research are presented as two design for playful participation frameworks, (one focussing on participation in events and one on artefacts) drawing from evaluation of the publications. The resulting frameworks promote the use of ludic participation to enact transformation regardless of the specific context of their application.

The publications utilise mixed methods research, drawing from practice-based research approaches (Sullivan, 2010; Smith and Dean, 2009; Gray and Malins, 2004) in the design and delivery of artefacts and events and qualitative social sciences research methods (Flick, 2014; Braun and Clarke, 2006; Flick, Kardorff and Steinke, 2004) in gathering and analysing participant experiences, where appropriate, to evaluate research claims. The design knowledge embedded within the publications, is evaluated within this thesis however, from a practitioner-researcher perspective, utilising the embodied knowledge of expert practice (Gray and Malins, 2004), perspectives drawn from expert practitioner interviews and literature underpinning to evaluate and synthesise publication findings into coherent frameworks for participation design.

The research focuses upon Western approaches to play and participation, specifically European design approaches. The choice to limit the focus of the research to the UK and Europe is to allow deeper analysis into the particular approaches and audiences within these regions.

1.2 Research Publications

Eight publications are presented within this thesis: six focus and reflect upon the design, implementation and evaluation of creative projects focussed upon playful intervention design in social contexts, and two provide theoretical analysis and expert practitioner insight into participation design. A full outline of the publications and the projects to which they relate can be found in table 1. The publications analyse participation from the perspectives of artefact creation and event facilitation can be subdivided as follows:

Participation in Events: Paper A, Paper D, Paper E, Paper F.
Participation in Artefacts: Paper B, Paper C, Paper G, Paper H.

Index of Publications	Project Title & Description
A. Love, L.H.C. (accepted/in press). 'Do we need permission to play in public? The design of participation for social play video games at play parties and 'alternative' games festivals', *Media and Communication Journal*, 6(2).	N/A
B. Parker, L. (2013). 'Abstraction in experimental animation and computer games', *Proceedings of CONFIA 2013.* Porto, Portugal, 29-30 November 2013.	Chreod - A single player game where players influence an object by affecting its landscape
C. Brennan, C., and Parker, L. (2014). 'Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere', *Proceedings of Electronic Visualisation and the Arts (EVA 2014)*, London, UK, 8 - 10 July 2014.	Forever Falling Nowhere - A hybrid dance and animation promenade performance
D. Locke, R., Parker, L., Galloway, D., and Sloan, R. (2015). 'The game jam movement: disruption, performance and artwork', *Workshop Proceedings of the 10th International Conference on the Foundations of Digital Games,* California, USA, 22-25 June 2015	Development Cultures - a six-month long workshop series exploring experimental video game production
E. Parker, L. and Galloway, D. (2017). 'Creative communities: shaping process through performance and play', *Transactions of the Digital Games Research Association*, Vol 3 (2).	Development Cultures (as Paper D.) Performance and Play - a week long intensive workshop bringing together digital games and theatre makers
F. White, G. and Parker, L. (accepted/in press). 'Playing the museum: participation, possibility and play in curating meaningful visitor experiences', *Leonardo Electronic Almanac*	N/A
G. *Ola De La Vida.* (2017). [Game Installation]. FuturePlay Tech Zone, 3-28 August 2017, Assembly Rooms. Edinburgh, United Kingdom.	Ola De La Vida - A three player cooperative social-play video game
H. *Northern Lights Ceilidh*. (2014). [Event], Dare to be Digital, 8th August 2014, Dundee, United Kingdom.	Northern Lights Ceilidh - a digitally mediated ceilidh event

Table 1: Index of publications aligned to related project(s) (where appropriate)

1.2.1 Participation in Events

Publication A presents the design of social play experiences from the perspectives of a range of industry practitioners who either actively create participative works or who create social play contexts within which participants interact with one another through play. The publication presents a model of participation gleaned from analysis of expert interviews which formalises the design of participation in events (Love, accepted/in press). Publications D and E explore such facilitation practically, positioning the event facilitator as an artist and as a context provider, who designs space and conditions to support a social interaction, the development of a community of practice and the development of participant agency (Parker and Galloway 2017; Locke *et al.,* 2015). Publication H analyses modes of participation in a museum context, exploring the tensions between inviting participant agency and traditional notions of curatorial authorship. This paper explores facilitation techniques from the perspective of events and games design in order to shed new light on participative experiences within more traditional contexts (White and Parker, accepted/in press).

These four publications provide contextual, theoretical, and practical insight into participation design for playful events in a range of social contexts.

1.2.2 Participation in Artefacts

Publications B and C explore the relationship between the author and the audience, building upon relational aesthetics to explore the positioning of interpretation as a mode of participation, particularly the ways in which it may lead to a "collaborative elaboration of meaning" by an audience (Bourriaud, 2002). This relationship is explored practically and theoretically through evaluation of two practice-based outcomes, a computer game, Chreod (Parker, 2013) and a hybrid performance event, Forever Falling Nowhere (Brennan and Parker, 2014). Publications G and H are 'practice publications' which analyse and evaluate the design of participative artefacts led by interpretative design strategies and design techniques to enhance social potential. The artefacts discussed are a social play digital game, Ola De La Vida (2017-2018), and a co-created participatory event, The Northern Lights Ceilidh (2014). These practice

publications are presented as peer reviewed works due to their selection for exhibition by third party organisations.

These four publications provide contextual, theoretical, and practical insight into participation design for playful artefacts in a range of social contexts.

1.3 Research Question

What are the key design principles that can promote participation in playful interventions (that is, co-located participation in bounded social play) in order to build temporary communities that maximise ludic potentials for exploring new perspectives and behaviours?

1.3.1 Sub-Questions

- In what ways can participation in social play "interventions" be designed?
- To what extent can the unpredictable aspects of play be harnessed and negotiated by a designer in creating playful interventions?
- How can a designer facilitate play, participant agency and potential for transformation through playful intervention design?
- To what extent can social playful intervention participation lead to the creation of a temporary community of play?
- What are the implications of social play participation on the individual, social grouping and community?
- How can participation in play be used by participants to identify needs and enact change for themselves, their community and society?

1.4 Contextual Background

> "Play in any society is kind of a good indicator of the health of that society. If you have a good, healthy society with respect and freedom and space for everyone, equality and so on, you will probably also see more people playing, because they feel safe enough, they feel that they're not only allowed to be there, but they're allowed to enjoy it and have fun." (Poulsen, 2017).

Play is a highly social endeavour which is widely recognised in aiding the formation of social bonds and a sense of belonging between players (Sicart, 2014; Brown and Vaughan, 2010; Flanagan, 2009). Play creates a "magic circle" which separates participation and behaviours in the play situation from the social rules and boundaries of the real world (Salen and Zimmerman, 2004; Caillois, 1961). Within the magic circle, players exist in a safe space where they negotiate shared understanding of what is and is not permissible within the new reality that the play creates (Sicart, 2017). The creation, maintenance and negotiation of such meaning by a group of individuals develops a play culture of shared values, rituals and beliefs for the length of the play experience. This culture or community is set "apart together" (Huizinga, 1949, p.13) from the rest of the world by the magic circle of play.

Play is also multifaceted (Gramazio, 2017) in that it leads to the emergence of unpredictable results (Brown and Vaughan, 2010; Hunike, LeBlanc and Zubek, 2004; Zimmerman, 2003). Play is an organising system which relies upon rules to operate (Huizinga, 1949) but is also a "space of possibility" (Spector, no date, cited in Jenkins and Squire, 2002) within which players have agency to push up against the rules and renegotiate meaning which can lead to unpredictable results. This can overwhelm the system of play, leading to a form of "transformative play" where the play system, the individual, or the space as a whole is changed (Salen and Zimmerman, 2004, p305). Transformation may involve shifts in the player's thinking, behaviour, and social relationships with others (both players and non-players) (Salen & Zimmerman, 2004).

Transformation is embedded naturally within play; the act of playing invites players to shift their perspectives of the world in order to step into the magic circle and participate within the negotiation of meaning and value which is inherent within any play experience (Rodriguez, 2006). This shifting of lenses draws each player's attention to the worldview they held prior to play and can allow them to recognise the constraints of their world view. The experimental nature of play allows the player to explore ways to move beyond such constraints within a safe space (Gordon and Esbjörn-Hargens, 2007). Trust within the play situation, however, is key to transformation (Benedetto, no date) as players must feel comfortable enough to step into the

magic circle in the first place (Salen and Zimmerman, 2004; De Koven, 2002). Trust in play is developed through negotiation of a social contract by which all players agree to abide (Salen and Zimmerman, 2004) in order to maintain the magic circle and functionality of the game.

Benedetto (no date) has developed "patterns of transformation" through the study of communities at life changing events. From a designer's perspective, they believe that an experience relies upon four factors to become transformational: the chaos presented by that experience (i.e. the unpredictability of play); that the experience is multifaceted requiring participation and social interaction; that each participants will have a different experience and that all permutations cannot be prescribed by a designer; and that the social aspect of the experience is bounded in "space, time, goings-on, and co-presence" (Benedetto, no date). Benedetto also presents a seven-step model for the design of transformation, which relies heavily upon risk identification, building trust, and the creation and maintenance of the magic circle (Benedetto, no date). Social and participative experiences in this model are central to evoking transformation.

Transformation may occur within shifts in perspective or behaviour and can also manifest itself in appropriation, where players, use play as a device "to explore, challenge or subvert" conventions and everyday normalities (Sicart, 2014, p.3-4) and in turn take action beyond the play situation to exert their new-found perspectives. For example, an individual used playful and inappropriate graffiti to draw their local authority's attention to potholes (Butterly, 2015a). This use of play to motivate change is a form of appropriation and could be called dark play. Dark play does not adhere to the rules of play, especially the central tenet that all play is voluntary, breaking the social contract of play (McGonigal, 2012; Caillois, 1961; Huizinga, 1949). In dark play, players play dangerous or risky games which may endanger their lives, or which may involve others in the play experience without their knowledge (Sicart 2014; Schechner, 1993). The aforementioned graffiti artist utilised dark play as a form of protest, using phallic and potentially upsetting shapes to motivate the local authority, who were not aware they had been recruited into the play situation, to take action (figure 2).

Figure 2: A still image of the repaired potholes in Bury, with the graffiti which motivated the repair still visible (Butterly, 2015b).

The use of such lude symbols calls the 'appropriateness' of this action into question, given that the general public will be involuntarily subjected to this imagery. Dark play can often seem innocuous to one person but subversive to others (Schechner, 1993).

Transformative play is recognised in academic studies and practical endeavour. Serious games (Michael and Chen, 2005), gamification (Walz and Deterding, 2015), games for change (Antle *et al.*, 2014) and persuasive games (Bogost, 2007) represent the study and active design of play and video games for societal transformation. Research in game design and education seeks to study and enact both individual and collective change, which may be temporary or more permanent, using transformative play as an underpinning approach (e.g. Tanenbaum and Tanenbaum, 2015; Barab, Gresalfi, and Ingram-Goble, 2010; Sotamaa, 2007)

Play as a tool for social change is often designed for a purpose and in order to achieve a pre-determined outcome. David Hayward, producer of the Feral Vector festival, raises potential issues in this approach:

> A lot of things [that] present as play for social change are actually quite superficial, and tend to be like band-aids, ...they might cheer some people up a bit, but it's not going lift everyone's mood so much that it resolves their depression, or something like that. I think a lot of play for social good projects are massively overstated, and I don't know how to fix that, or if it's fixable (Hayward, 2017).

Hayward's point succinctly summarises the rationale for the framing of this research. Rather than drawing from techniques where the matter for transformation is pre-defined, such as in serious games, gamification, games for change or persuasive games, instead, this research aims to use the safety of the magic circle try to mitigate the social rules and behaviours which cause anxiety and concerns around social interaction. Furthermore, through the design of participation and play, the research aims to help players to shift their perspectives on the world to negotiate and experience new behaviours. The research does not seek to embed social meaning or persuasive arguments within playful intervention design, but rather creates a series of invitations from which participants can enjoy play for its own value in a social grouping, and, where appropriate, define and enact transformation for themselves in relation to their experiences. The rationale for such agency is supported by Mathias Poulsen, director of the Counterplay festival who believes:

> If there's no real participation, and also no real power… If they, people don't actually have agency to change the situation and the experience, there's also, usually, not a lot of ownership. And if there's not a lot of ownership, I think the outcome basically, the things that you learn…. the potential for some sort of transformative change, is very small (Poulsen, 2017).

1.4.1 Designing for Community (temporary or otherwise)

The situation of the body of research in the arena of communities of practice underpins the research interest in participant-led transformation. A community of practice is a grouping of people who come together, due to a shared interest, to learn through doing: participation

becomes practice (Hutchinson *et al.*, 2015; Wenger, 1998). Communities of Practice are typically applied in relation to learning socially and Wenger (1998, p.226) believes:

> Learning – whatever form it takes – changes who we are by changing our ability to participate, to belong and to negotiate meaning. And this ability is configured socially with respect to practices, communities, and economies of meaning where it shapes our identities.

Social learning therefore, is recognised to be transformative for the individual and for their surrounding community (or communities). They are spaces for knowledge transfer, collective meaning making and communal growth. The community of practice has an "aliveness" driven voluntarily by a collective passion for a subject or area of enquiry which motivates their existence and propagates their development (Wenger, McDermott and Snyder, 2002, p.50). These communities cannot be designed but can be identified, supported and designed *for* by a facilitator (Wenger, 1998). Designers who wish to support potential communities of practice, therefore need to design to "invite and evoke aliveness" (Wenger, McDermott and Snyder, 2002, p.50). Wenger, McDermott and Snyder, thus propose seven principles for cultivating communities of practice (table 2).

1. Design for evolution	The need to support the development of ideas, meaning and focus driven from within the community
2. Open a dialogue between inside and outside perspectives	The need to balance the development of shared knowledge within the community and to invite the perspectives of people from out with the community to cultivate discussion, development and growth
3. Invite different levels of participation	The need to recognise members have different levels of interest in the community and will participate at levels which suit their interests. People typically participate in one of three degrees (and can move between them): core (active participation and potentially leadership) active (actively participate) and peripheral (rarely participate, closer to spectators)
4. Develop both public and private community spaces	The need to recognise that interactions happen across the whole community and in one-to-one interactions between members of the community and to design spaces for this.
5. Focus on value	The need to recognise that value is the core motivation for individual participation and thus the events, activities and relationships which come from the community should be driven by individuals within the community and their sense of value.
6. Combine familiarity and excitement	The need to devise activities which are comfortable for the community, to support open discussion and debate whilst also inviting new perspectives and participants to disrupt practice and encourage new modes of thinking.
7. Create a rhythm for the community	The need to organise a pattern of activity which supports enough participation to keep the community engaged, not so much as to overwhelm and not too little to give a sense of a lack of progress. These patterns need to evolve with the community, their interest and needs in order to maintain a sense of aliveness.

Table 2: Seven Principles for cultivating communities of practice along with brief descriptions of their qualities (adapted from Wenger, McDermott and Snyder, 2002, p.50 - 64).

Play has much in common with the concept of communities of practice. Play has a social quality that promotes interaction and collective creation of meaning much like a community of practice. Play inherently invites participants to collectively question existing societal norms, challenge accepted behaviours and systems and reform perspectives through collective

agreement of meaning. These aspects mirror Wenger, McDermott and Snyder's principles for cultivating communities of practice (2002). Both participation in play and participation in a community thus has transformative potential and the ability to motivate a social grouping into collective action driven by their collective values, experiences and knowledge.

Play theorists have previously recognised this parallel between communities of practice and play. Pearce (2011) promotes the community of play whilst De Koven (2002) proposes the concept of play communities. A community of play is a group of people who form links with one another by playing within any given game. A bounded play community is limited in space and time, playing for one play experience only, whereas an unbounded play community will move beyond the game itself to continue playing together or will play across multiple play sessions (Salen and Zimmerman, 2004). Within an unbounded play community, the social aspect of playing together becomes more important than dedication to playing any single game, and thus participants are willing to change the rules, the game or play contexts in order to continue playing together (Pearce, 2011). Communities of play are brought together by a shared interest in play, much like a community of practice is brought together due to a shared interest in a topic. De Koven's definition of a play community is subtly different, embracing the temporary bounded nature of a play situation, claiming that a play community can exist anywhere that there are people who want to create it and its rules and behaviours are made up throughout play (De Koven, no date, cited in Fluegelman, 1976).

In the context of co-located social play, play communities tend to be more temporary, more in line with De Koven's play communities or the notion of bounded community (Salen and Zimmerman, 2004). The social groupings tend to exist for the length of a particular play experience or event. For the study of these temporary social groupings in relation to playful intervention participation design, the term 'temporary communities of play' is proposed building on the aforementioned conceptions of play communities, bounded communities and communities of practice.

Wenger (1998) and Pearce (2011) promote sustained participation in the community in order to lead to development and growth (i.e. transformation). This presents a tension in studying temporary communities of play in relation to potential transformation. Huizinga (1949, p.12) however, believes that no matter how temporary the experience:

> A play-community generally tends to become permanent even after the game is over. Of course, not every game of marbles or every bridge-party leads to the founding of a club. But feeling of being "apart together" in an exceptional situation, of sharing something important, of mutually withdrawing from the rest of the world and rejecting the usual norms, retains its magic beyond the duration of the individual game.

It is this “magic” or imprint upon participants left by shared experience that is deemed to make temporary communities of play and their design appropriate vehicles to study in terms of their potential to bring people together, create new meanings and perhaps enact participant led transformation. Within academic literature, there has, as showcased by Wenger (1998), Wenger, McDermott and Snyder (2004), and Pearce (2011) been significant study of the formation and cultivation of both co-located and online communities (see also Ang, Zaphiris, and Wilson, 2010; Ducheneaut *et al.*, 2006) but less so in relation to bounded or temporary communities and the implications of their design and facilitation.

1.4.2 The Academic Landscape of Social Play

There has been significant academic study of social play analysing its benefits for children (Hughes, 2010; Burdett and Whitaker, 2005; Barnett, 1990) the use of technological mediation for broader audience groups (Isbister, 2010; Stenros, Paavilainen, and Mäyrä, 2009) and the impact of spectators and audience on play performance (Downs *et al.*, 2014; Kappen *et al.*, 2014; Reeves, 2012). The study of the use of objects (or in this case ‘play interventions’) to create relations within art (Kester, 2004; Bourriaud, 2002) and human computer interaction (HCI) (Isbister, 2016; Dourish, 2004) has also been explored.

From a design perspective there have been a number of studies which evaluate the design of playful artefacts which facilitate social interaction. Bekker, Sturm, and Eggen (2009) studied the design of play objects to enhance social interaction in physical games for children. They found, through iterative design of six play objects, that traditional play and social interaction can be extended through objects which adhere to three design rules: the objects must provide feedback; they should provide opportunities for the players to attach meaning to the feedback; and objects which allow players to create their own games (i.e. agency) enhanced social play and physical activity. Garner *et al.* (2013) explore social interaction through digital mediation within physical games for adults, suggesting that mapping player's physical movement directly to digital mediation devices enhances social interaction as it removes players' focus upon a screen. They suggest that designers of movement-based games should design for the space between players and digital mediation. These studies share similarities with the thesis research, however, the thesis differs in drawing from playful interventions which are more varied in their design approaches (i.e. artefacts and events).

Márquez Segura and Isbister (2015) aim to formalise the design and evaluation of physical co-location social play that is technologically mediated. Their research promotes three core themes to the design of collocated physical social play: "Make Good Use of all of the Design Material at Hand–Technology"; "Design to Embrace Player Influence and Impact"; "Encourage and Protect the 'We' in Social Play." Their research aligns closely with the aims of this thesis; however, they focus more upon the design properties of artefacts and the interrelations between players in the play situation itself than the invitation to participate or transformative potential. Goddard, Garner, and Jensen (2016) similarly study social play, focussing upon mobile games design utilising game design frameworks in their analysis of video games (one of which they designed). They found that mobility in the design of social play mobile games allows for co-location of players across public spaces, supports physical interactions between players' bodies and provides "asymmetric design patterns." Wilson (2012) discusses the novel use of input devices from a designer's perspective, claiming that video games can promote 'togetherness' and that by being "intentionally designed to be confrontational, broken, or

otherwise “incomplete” can help inspire a decidedly festive, co- dependent, and performative type of play” (Wilson, 2012, p.3).

Social play facilitation and event design, in relation to festivals of play and play parties has received limited academic attention, with only a few studies in existence (Parker, Whitson, and Simon, 2017; Wood, 2016; Gavin, Kenobi and Connor, 2014). Concordia University has also recognised the dearth of research in this area, and recently looked to facilitate knowledge sharing between event facilitators, academics and practitioners in their “Indie Interfaces Symposium” in 2017 (Parker, Whitson, and Simon, 2017b).

As previously discussed, although interested in transformation through play, this research does not draw from serious or persuasive games research, as the focus is upon developing participant agency rather than a persuasive voice within playful intervention design. The research also acknowledges a wealth of participatory design work that has taken place in participatory arts practice (Bishop, 2012; 2011; Almenberg, 2010), artist led activism (Bogad, 2016; Solnit, 2016; Kester, 2011), social aesthetics (Born, Lewis and Straw, 2017) and dialogical aesthetics (Kester, 2004), and many of the publications reference or draw from these concepts in order to underpin design practices.

1.5 Research Contribution

Participation in a community is neither a positive or negative occurrence. Communities can lead to transformation, but they can also lead to ingrained practices and closed mindedness which limits growth and keeps participants “hostage” (Wenger, 1998). The result of a community of practice, much like the results of a play situation are unpredictable and are shaped by the individual actors within the rules of the participative space. The temporary play community may similarly have positive or negative consequences, (as showcased by dark play and appropriation) but the likelihood of being held hostage is far smaller due to their bounded nature. On the other hand, the temporary nature may also limit the level and depth or transformation possible, as ongoing negotiation and participation, for Wenger (1998) and Pearce (2011) is key to growth. However, it is believed that temporary communities too can be

beneficial and transformative, as implied by Huizinga (1949), Benedetto (no date) and De Koven (no date, cited in Flugelman, 1976), promoting the need for further research and exploration of these different forms of ludic participatory communities.

The research aims to firstly formalise the design of participation in playful interventions for an individual through the presentation of two participation design frameworks; one which focuses upon the design of participation in artefacts and one which focuses upon the design of participation in events. The research also models "un-designable" factors which designers and context providers must take into account when approaching participation design. Lastly, the thesis aims to evaluate the implications of participation within social play upon participants in order to build a clearer picture of the potential for playful participation to lead to transformation, whilst also acknowledging the complexity of measuring transformation.

The research is approached from artistic and design sensibilities, seeking to explore participation design rather than to define the transformation in and of itself. The impact of social play design, situations and participatory experiences have been explored academically, however the design principles for enacting participation and evoking participant led agency through artefacts and event design have received less academic attention. Benedetto (no date) is developing a framework for transformation through events, however, consideration of enhancing participation and providing agency is not central to their model. The unique contribution of this research is the extension of the existing body of research to not only formalise design approaches to support participation but to also interrogate the larger implications of these design techniques in supporting social interaction, agency and the potential for transformation.

1.6 Chapter Summary

Within this chapter, the research question and sub-questions were presented, and the research publications which contribute to the research were introduced and categorised. The chapter then provided a background body of literature which forms the foundation and rationale for this PhD by publication. It also acknowledges a wealth of academic work around social play

design in the arts, technology and education and positions the research contribution within this landscape of practice. The chapter concluded by making a statement regarding the unique contribution to knowledge made by the thesis.

Chapter 2: Methodological Context

The thesis draws from eight academic publications which act as a sustained body of research around the design of participation in social play. Within this chapter, the positioning of the publications within the thesis structure is rationalised, before the process of evaluating and synthesising the publications to address the research questions is detailed. In revisiting the publications, opportunities to draw further findings through enhanced analysis were identified and undertaken. The rationale and process for this additional work within the context of this thesis is outlined. This chapter concludes with a detailed account of the research methodology utilised to synthesise the findings from publication evaluation into two final participative frameworks: design for participation in artefacts and design for participation in events.

2.1 Publications as Case Studies: A Note on Thesis Structure

Each academic publication is positioned within this thesis as a case study within chapter three. Each case study presents a summary of the paper alongside an overview and critique of the research methodology used. In some places, where appropriate, new work is undertaken to address potential new insights in revisiting the original research data.

Each case study presents a formal account of the participative design techniques promoted within the publication in the form of a table, from which, practitioner reflection is undertaken using an evaluative framework. The evaluation aims to determine the strengths, weaknesses and gaps in participation design within each publication and to assess their transferability. Techniques which are deemed robust, reliable and transferrable are summarised and recommended for consideration within the synthesis of the final participation design frameworks.

The publication case studies summarise content, methodology, findings and evaluation consecutively and are presented as a series working through each publication one by one. This approach has been utilised so as to minimise potential repetition that may be caused by following a more traditional thesis structure.

2.2 Publication Formalisation and Reflection

In analysing the methodology of each publication, opportunities presented themselves to glean further valuable information to contribute to participation design of playful interventions. For publication A additional content is presented as addendum to the original publication. The rationale and methodological process undertaken for this new work is presented briefly below and in more depth within the publication case study for this paper in chapter three.

Publications B, C, D, E, F, G and H were evaluated in two discrete stages: formalisation of design techniques and reflection upon techniques drawing from underpinning literature and expert interviewee experiences. Publication A also undertook a two-step process of analysis. Firstly, additional research was undertaken and formalised into a table of design techniques within the publication case study. Secondly, the design techniques were evaluated drawing from underpinning literature and expert interviewees using a method consistent to that described for the final publications below.

2.2.1 Final Publications Step One: Formalisation of Design techniques

All final publications (B, C, D, E, F, G and H) were reviewed systematically to draw out the specific decisions made by the designer in order to invite and enhance ludic play and participation around an artefact or within an event. The techniques were drawn from the practice of the researcher and from the techniques used by expert practitioners presented as case study examples. The identified techniques were organised by theme and are presented as a series of tables within the findings section of each case study. The formalisation of design techniques in this way aims to explicitly present the contribution made by each publication to the thesis.

2.2.2 Publication A Step One: Additional Research and Formalisation of Design Techniques

Publication A presents a ‘model of participation’ informed by six expert practitioner interviews. Eleven interviews in total were undertaken, but the paper focussed upon six interviews only due to their direct links to video games related participation design in order to address a specific journal call (Cogitatio, 2017).

The extended data set, which drew more broadly from ludic play practitioners, was determined to be integral to the development of a transferable and robust model of participation design, therefore, the case study of publication A is presented with an addendum which takes into account the full dataset. The model of participation is revised and presented to more fully reflect the design of playful participation. The revised model of participation was developed using a consistent research methodology to the original model and the full research process is detailed in chapter three.

2.2.3 Step Two: Publication Case Study Reflective Process

The design techniques utilised within each publication were tested and evaluated by the practitioner during the research process through "reflection-in-action" (Gray and Malins, 2004, p.22) and through peer reviewed publication have been recognised to have academic significance.

Within each publication case study, the design techniques are formally presented to provide a summary for the reader and to underpin evaluation of their value in facilitating participation. Drawing from the findings of the papers, practitioner reflection, expert practitioner experiences and underpinning literature, an evaluative framework has been formed, through which the design techniques are evaluated to uncover their transferability beyond the context of the original publication (table 3). The four evaluative criterion have been selected for use due to their prevalence and importance within background literature, practice and expert interviewee experiences.

The design techniques presented within each case study will be discussed in relation to the key concepts within the evaluative framework in order to understand the extent to which they support, improve upon or are lacking in relation to this foundation of knowledge. Any gaps or weaknesses will be discussed in order to explore the ways in which they point to potential areas for development of participation design. The outcome of this evaluative process will be a series of recommendations for participative design techniques which should be taken forward for synthesis into the two final design frameworks.

1. Formation of trust	Bounded and unbounded communities "Apart together" (Huizinga, 1949, p.13) Magic Circle (Salen and Zimmerman, 2004; Huizinga, 1949) Social contracts (Salen and Zimmerman, 2004) Seven factors of Community Cultivation (Wenger, McDermott and Snyder, 2002)
2. Supporting agency	Lenses in play (Gordon and Esbjörn-Hargens, 2007) Transformative play (Salen and Zimmerman, 2004; Benedetto, no date) Ownership (Poulsen, 2017)
3. Unpredictability of play within design	Appropriation (Sicart, 2014) Dark Play (Schechner, 1993)
4. Emergent issues and gaps	This criterion aims to summarise gaps within the findings of the research or emergent concepts.

Table 3: The Participation Design Evaluative Framework

2.2.4 'Final' Framework Synthesis and Creation

The recommendations made across the eight publications as a result of this evaluative process will be subject to a process of thematic coding, where each recommendation will be coded and organised by code to identify developing categories and their relationships. The resulting categories will be evaluated, seeking to build conceptual hierarchies which organise the recommendations made by each paper under larger design themes and aims (Saldaña, 2016; Braun and Clarke, 2006). This process of data organisation and reduction will allow for key themes to emerge and be synthesised into two robust, concise, transferable and trustworthy models for design of participation in social play contexts.

2.3 Chapter Summary

Within this chapter the thesis methodology was outlined, including the rationale for framing each paper publication as a case study to minimise repetition, make the contribution of each paper more explicit for the reader and allow more direct comparison of research findings. In relation to Paper A, rationale for additional work is presented alongside an overview of the methodological process for this work. The chapter concludes by presenting the evaluative

framework for application within each publication case study alongside the approach to synthesis of publication findings into a cohesive, transferrable and robust body of knowledge.

Chapter 3: Publication Case Studies

This chapter focuses upon formalisation, evaluation and reflection on the findings drawn from the publications which make up this thesis. Firstly, an overview of the contribution made to each publication and associated creative projects by the author is described. Each publication is then presented in order, as a case study.

The case studies follow a consistent structure: firstly, a summary of the publication and a statement of its contribution to the thesis is provided. Secondly, the research methodology is described and critiqued in order to evaluate the reliability of research findings. The findings section explicitly states the ludic participation design techniques utilised within the publication and presents a summary of the evaluation of these techniques against the evaluative framework. Each case study concludes with recommendations regarding the design techniques which should be taken forward for evaluation and synthesis in the final participation design frameworks for playful artefacts and events.

Publication A presents a slight deviation from this format, due to the addition of further research (as described in chapter two). The case study for publication A therefore presents a summary of the methodology and findings of this further research, including a revised model of participation, prior to formalising the new knowledge within the findings section.

3.1 Paper Contribution Statement

The thesis draws from eight publications, four of which are co-authored and six of which reflect collaborative practice works. Table 4 demonstrates the contribution made to both the publications and projects by the author in relation to co-authorship. These contributions have been agreed with collaborators and co-authors and signed co-authorship statements for each of the published academic papers can be found with the publications themselves in appendix A.

Index of Publications	Contribution
A. Love, L.H.C. (Accepted/in press). 'Do we need permission to play in public? The design of participation for social play video games at play parties and 'alternative' games festivals', *Media and Communication Journal*, 6(2).	Paper Authorship: 100%
B. Parker, L. (2013). 'Abstraction in experimental animation and computer games', *Proceedings of CONFIA 2013.* Porto, Portugal, 29-30 November 2013.	Paper Authorship: 100% Project: Designer and artist
C. Brennan, C., and Parker, L. (2014). 'Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere', *Proceedings of Electronic Visualisation and the Arts (EVA 2014)*, London, UK, 8 - 10 July 2014.	Paper Authorship: 50% Responsible for: forming literature foundation and case studies; collaborative data gathering and analysis; significant contribution to write up and proofreading for publication. Project: Animator and collaborator
D. Locke, R., Parker, L., Galloway, D., and Sloan, R. (2015). 'The game jam movement: disruption, performance and artwork', *Workshop Proceedings of the 10th International Conference on the Foundations of Digital Games,* California, USA, 22-25 June 2015	Paper Authorship: 40% Responsible for: proposition of game jams as performance works; data analysis of both case studies and write up within final paper. Project: Introductory workshop co-designer, Analogue to Digital Participant and Jump Jam Facilitator
E. Parker, L. and Galloway, D. (2017). 'Creative communities: shaping process through performance and play', *Transactions of the Digital Games Research Association*, Vol 3 (2).	Paper Authorship: 50% Responsible for: framing around cultural hubs; data analysis and write up in final paper. Project: For Development Cultures as Paper D For Performance and Play, workshop participant
F. White, G. and Parker, L. (Accepted/in press). 'Playing the museum: participation, possibility and play in curating meaningful visitor experiences', *Leonardo Electronic Almanac*	Paper Authorship: 50% Responsible for: promotion of participatory approaches in museum contexts; promotion of possibility spaces and alternative games festivals; substantial contribution to write up.
G. *Ola De La Vida.* (2017). [Game Installation]. FuturePlay Tech Zone, 3-28 August 2017, Assembly Rooms. Edinburgh, United Kingdom.	Paper Authorship: 100% Project: Artist, animator, physical gameplay designer
H. *Northern Lights Ceilidh*. (2014). [Event], Dare to be Digital, 8th August 2014, Dundee, United Kingdom.	Paper Authorship: 100% Project: Artist, animator, live graphics technician, project designer.

Table 4: Index of Publications with associated authorship contributions and details of project roles

3.2 Publication A: Do We Need Permission to Play in Public? The Design of Participation for Social Play Video Games at Play Parties and 'Alternative' Games Festivals.

Figure 3: Photographs of participants forming temporary communities around digital play at A MAZE. / Berlin (left) (Keiner, 2017) and Now Play This (right) (Catchpole, 2017).

Publication A interviewed six expert practitioners (game designers, festival producers and event curators) who design or facilitate playful experiences involving or related to videogames (figure 3). Within the paper, the experiences of the practitioners were analysed to identify how the diverse needs of their audiences drive their design approaches. Drawing from these needs and concrete examples from practice, a model of participation utilised by social play events was formed. This model presented four key design considerations which need to be balanced in order to engage with players, game developers and new audiences: comfort and discomfort; niche and mainstream; curation and gatekeeping; and insiders and outsiders. These needs are contextualised within the research in relation to concepts of transformative play, cultural intermediation, curation and gatekeeping and communities of practice. The research also presented the impact of social play facilitation and the challenges faced by facilitators beyond balancing diverse audience needs in terms of event sustainability and personal cost.

The contribution made by this paper to the thesis is the formalisation of participative design practices used by expert practitioners.

3.2.1 Research Methodology

Paper A is informed by thematic analysis of six expert interviews. The interviews were carried out in person or via Skype and lasted between one and two hours. The interviews were semi-structured and focussed upon four themes: gathering information about the interviewee; discussing views on play; identifying how they support participation and community; and reflection upon their events impact on culture and society. Discussions broadly followed the same question structure; however secondary follow-up questions were used as probes as necessary (Kvale and Brinkmann, 2009).

The interviewees were:
Malath Abbas, Festival Producer, Arcadia Festival
Andrew Dyce and Craig Fairweather, Event Curators, We Throw Switches
Holly Gramazio, Festival Producer, Now Play This
David Hayward, Festival Producer, Feral Vector
Lorenzo Pilia, Event Curator, Berlin Game Scene
Thorsten S. Wiedemann, Festival Producer, Amaze Festival, Berlin

Interviews were audio recorded and transcribed for analysis. Thematic analysis was undertaken for each interview transcript consecutively. Codes were inductively drawn from the first interview transcript using a "splitting" approach with multiple codes being applied per sentence. This provided nuanced insight into the emerging concepts from the early stages (Saldaña, 2016, p.24). These codes were applied to the following transcript and when new codes inductively presented themselves, all proceeding transcripts were revisited. This process was repeated for all transcripts. "Coding the codes" (Saldaña, 2016, p.229) took place during the coding process, where, after each subsequent interview, the codes were reviewed for their relevance, issues with specificity and overlap. Where issues were identified, codes were combined and revised in order to keep the coding process manageable. Codes are not typically revised during the coding process, but rather in-between the first and second round of coding

but in this case, revision of codes took place consistently to ensure codes were fit for purpose and the data set was manageable.

Upon completion of coding, code mapping was undertaken where initial codes were organised into categories of relation through several iterations of analysis (Saldaña, 2016; Braun and Clarke, 2006). The resulting categories led to higher level conceptualisation better representing the central themes of the data set (Anfara, 2008). Themes were drawn from the final data set of codes were used inform the creation of a model of participation which was contextualised and analysed in relation to practitioner examples and underpinning literature.

3.2.1.1 Critical Review of Research Methodology

Eleven expert interviews were undertaken in total to inform this publication and provide contextual grounding for practice-based research within this thesis. The interviews provided insight into design process for participation and how designers understand, read and react to their communities. Six of the practitioners work directly with video games, and five use play more broadly. A subset of the data, drawing only from the six practitioners working with video games contributed to publication A due to targeting a specific video games related call for papers.

There are no methodological issues present within the research process, however, by focussing only on video games practice, the research omitted a rich landscape of knowledge relating to play in its many forms. The remaining five interviewees were:

Emma M Bearman, Playbox
Mathias Poulsen, Festival Producer, Counterplay
Sebastian Quack, Artist, Invisible Playground
Ju Row Farr, Artist, Blast Theory,
Jim Thomson, Live Action Role Play (LARP) Designer, Curious Pastimes

The experience and knowledge of these practitioners in designing participation and delivering events which are playful are deemed to be integral to developing a ludic participative framework which aims to form temporary communities. Therefore, these five interviews were combined with the data which contributed to publication A and informed the creation of a revised, yet more robust model of participation. The expanded data set was analysed in a manner consistent with the analytical process detailed in section 3.2.1.

It is unusual within a PhD by publication to present new work or amendments to peer-reviewed publications, however, it was felt that expansion of the dataset and revision of findings to include more diverse play contexts enhances the transferability and reliability of the research findings.

3.2.2 Revising the Model of Participation

The model of participation presented within Paper A identified that event facilitators must balance four design considerations to meet the needs of the diverse communities who attend video games related events. This model is presented within table 5 with expanded detail summarising each consideration's design techniques. The model reflects both the human needs of participation, considering aspects such as physical and social comfort and the specialist nature of video games as a form which has the potential to exclude or alienate newcomers.

Consideration	Associated Design Technique
Comfort and Discomfort (*confidence* to expand perspectives)	Hospitality and atmosphere Ecologies of Participation Transformation Accessibility
Niche and Mainstream (*legitimacy* to expand audiences)	Preconceptions Leveraging social contexts Enhancing Social Potential
Curation and Gatekeeping (*diversity* in space provision for participation)	Value Systems Transparency and Diversity (ecosystem of events)
Insiders and Outsiders (*Scaffolding* to support community expansion)	Balancing needs of diverse communities Scaffolding to promote transition

Table 5: Model of participation design with additional detail of applied design techniques.

The practitioners within the expanded dataset work with participation and play in different ways across the design and facilitation of interactive arts, physical games, festival curation and play in the community. Their work is not lacking in digital elements; however, they tend to focus more on designing experiences which are playful than those structured specifically around digital technology.

Thematic analysis of this expanded dataset enhanced the associated design techniques applied under two of the model of participation design considerations: Comfort and Discomfort and Curation and Gatekeeping. It also led to diversification of five existing associated design practices. Finally, a fifth consideration was identified, Facilitation and Agency. This consideration was created due to the emergence of a fifth need presented by the diverse communities which attend events: unpredictability.

When reviewing the full dataset, it became clear that the original model did not fully address the diverse and unpredictable nature of event participants. Facilitators need to embrace audience unpredictability in: their levels of participation; their motivations to attend; their behaviour during the event; and their likelihood to appropriate the activity to suit their own interests. Participant agency was previously hinted towards within the model, however, it became clear that greater emphasis was required. This additional consideration also led to redistribution of the associated design techniques between comfort and discomfort and facilitation and agency where appropriate. The final model of participation design is presented in table 6 and the analysis which led to this revision can be found in appendix B.

Consideration	Associated Design Techniques
Comfort and Discomfort (*confidence* to expand perspectives)	Hospitality and atmosphere Transformation* Accessibility* Safety and Risk* Commonalities*
Niche and Mainstream (*legitimacy* to expand audiences)	Preconceptions* Leveraging social contexts Enhancing Social Potential*
Curation and Gatekeeping (*diversity* in space provision for participation)	Value Systems Transparency and Diversity (ecosystem of events) Value Promotion*
Insiders and Outsiders (*Scaffolding* to support community expansion)	Balancing needs of diverse communities Scaffolding to promote transition*
Facilitation and Agency (*Unpredictability* as a tool support participation*) **	Programming for Unpredictability* Ecologies of Participation Supporting Appropriation*

Notes: * denotes new contributions to the framework

Table 6: Revised model of participation design with additional detail of applied design techniques.

3.2.3 Publication A: Revised Model of Participation Design Findings

The revised model of participation design is presented within table 6. In evaluating the design techniques promoted by this model against the evaluative framework, the following conclusions can be drawn:

- The revised model of participation is deemed to have transferable qualities in supporting the design of participation of an event. The model is informed by festival design, artistic event design, play in the community and participative game design and

thus, considers a broad range of contexts and their impact upon social playful participation. The model does not provide concrete design approaches, but rather highlights conflicting issues which a context provider must balance in order to facilitate an event. Pointers towards specific techniques are detailed as a menu from which context providers can choose depending upon the needs of their audiences.

- Evaluation of the model also presents additional considerations for participation design which are embedded but not explicit within the model: communities within events tend to exist as a series of micro communities and programming needs to consider the promotion of cross-community participation to enhance social potential; it is difficult to support participant agency where designed outcomes have been planned (i.e. in an artistic context), therefore the balance of facilitation and agency needs to suit the designed intentions of the context provider; and a need to consider the positioning of the event within the larger landscape of events (as an ecosystem) to promote value and support diverse participation.

The model of participation design is deemed to be robust and transferable for consideration in the synthesis of the final framework for participation design for events. The additional considerations of authorship and agency and the ecosystem of events will also be promoted as design themes as will the need to consider facilitation of cross-community participation. The detailed evaluation process for this publication can be found in appendix C.

3.3 Publication B: Abstraction in Experimental Animation and Computer Games.

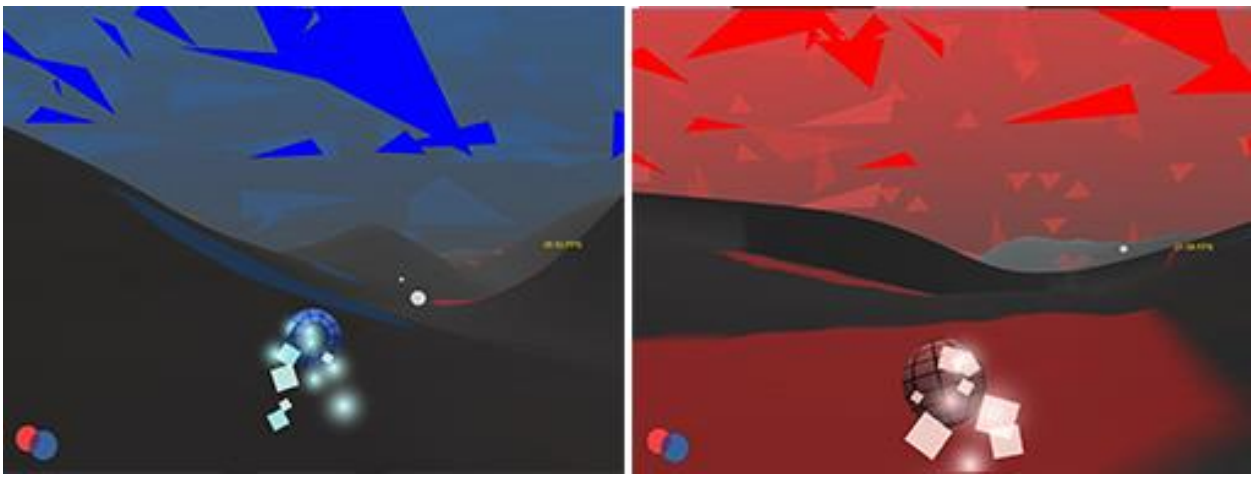

Figure 4: Screenshots from Chreod (Parker and Sams, 2013), showcasing the use of geometric shapes and colour to communicate progress and performance in the game.

Publication B carried out a literature review of experimental and abstract design in animation and games to frame case study analysis of four practitioners: one in the field of experimental animation, one using experimental animation for research purposes and two in the field of experimental games design. The paper used this analysis to position and critique the design of an abstract mobile game, Chreod, designed by the researcher (Figure 4). The paper claims that geometric abstraction within a moving image or interactive work invites an audience to actively participate in creating their own meaning around the work through providing a possibility space for interpretation. The paper concludes by making recommendations for further work to verify claims and to enhance the interpretive language around abstract work production and consumption.

The contribution made by this paper to the thesis is the promotion of design techniques which invite interpretation of an abstract work by an audience member or player as a form of active participation.

3.3.1 Research Methodology

Publication B uses literature underpinning and design language to analyse abstract works of four practitioners. This analysis highlights a range of techniques used by practitioners to invite interpretation. These techniques provide contextual framing for the discussion of the design

process of two practice-based outcomes. The results of evaluation of these outcomes provides insight into the practical application of design theories and the promotion of further work to evaluate their success through user testing.

3.3.1.1 Critical Review of Research Methodology

Literature review, practical experience of design and reflection underpin this publication. The claims made within the paper rely upon reflective practice, rather than critical analysis or user testing. The lack of structured analysis limits the evaluation of design approaches within the publication and thus calls the transferability of the findings beyond the context of this particular project into question. These limitations should be considered in the evaluation process of this publication.

3.3.2 Publication B Findings

Publication B implicitly promoted a series of design techniques for participation through interpretation of abstract works. Through review of the paper, the design techniques promoted by both practitioner case study analysis and practice-based research can be formalised as four primary design themes as summarised in table 7.

Design Theme	Design Techniques
Thematic Framing	Naming systems to provide a frame for interpretation for the audience.
Contrast and Intensity	Use of contrast in colour, timing, shape, and movement
Content and Interaction to Focus Attention	Focus interpretation on content by minimising form use to necessities Manipulating levels of control/agency to focus attention on impact and implications of input Anthropomorphism to infer meaning
Metaphors for Meaning	Using game mechanics as metaphors to create meaning in interaction

Table 7: Design techniques to invite participation through interpretation of an artefact.

Evaluation of the participative design techniques suggests, through theoretical underpinning, that the use of interpretation as an invitation to participate can be quite powerful in engaging a participant but needs to be balanced with the authorial intent of the work (as previously highlighted by publication A). The following conclusions can be made from the evaluation of the design techniques promoted by publication B:

- Two of the design approaches, thematic framing and metaphors for meaning are underdeveloped due to limited application within the publication. However, upon assessment against the evaluative framework, these two aspects clearly show potential and should be carried over into the final framework, with the caveat that they work well for encouraging interpretation, but their concrete application requires further exploration (beyond the scope of this research) in order to be fully realised within the framework.

- Thematic framing could allow the author to participate in dark play, disrupting the social contract with the participant and creating a challenge to their interpretative position in relation to the work. Such challenge may alienate, or it may empower agency and ownership in the participant.

- The framework promotes disruption of the social contract of participation in embracing contrast and intensity during the participative experience. Contrast and intensity as communicative tools to suggest transformation, change or progression are vital, however, these design techniques must be layered appropriately to add complexity and challenge without breaking the social contract (and thus magic circle) around the experience and potentially alienating the participant.

- The promotion for using content and interaction to focus attention are too supportive of authorial intent, and the specific approaches detailed within this limited research (i.e. minimising form) may limit the participant's space for interpretation. It is proposed that

this design technique be revised, to embrace the concept of “possibility space” (Spector, no date, cited in Jenkins and Squire, 2002) using content and interaction techniques, perhaps through anthropomorphism, abstraction, or modulation of gameplay mechanics to provide spaces for participant agency.

Evaluation of the design techniques drawn from this publication demonstrates, that with minor modifications (as described above) the following aspects can contribute to inviting participation through interpretation: thematic framing; contrast and intensity; providing a space of possibility through content and interaction; and metaphors for meaning. These elements should be considered for synthesis into the final design frameworks but require further practical testing. Consideration of the relationship between authorial intent and agency is also required in participative artefact design. The detailed evaluation process for this publication can be found in appendix D.

3.4 Publication C: Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere.

Figure 5: A photograph showcasing a contemplative moment between the two dancers during Forever Falling Nowhere (Mayer, 2013).

Publication C analyses a practice-based outcome, Forever Falling Nowhere (FFN) (figure 4) which fuses dance and animation, from the perspective of the collaborators and the audience. Each collaborator completed a reflective questionnaire as did 3% of the total audience of the event to inform analysis of the communication of concepts through abstract performance to an audience and the influence of collaborative creative intent upon this communication. The publication found that direct communication of meaning from the creators to the audience did not occur and that the audience found the space for interpretation provided in the more abstract chapters of the performance most meaningful. The paper also found that the parts of the performance the audience found most appealing were where the collaborators creative intent aligned most closely.

The contribution made by this paper is the formalisation of interpretive participative design techniques underpinned by practitioner and audience data. Documentation of FFN can be found in appendix E.

3.4.1 Research Methodology

Publication C utilises case study analysis of practitioners to form contextual framing for the discussion of meaning through movement and abstract media. The case studies also provide analytical language for describing movement, creative intent and abstracted work production which shapes the language used throughout analysis of the practice-based outcome. The final work is analysed in light of the results of two sets of qualitative questionnaire data. The first set aimed to gather insight into the artistic intent of the collaborators (including the researcher) who developed the work. The second set aimed to gain insight into the audience engagement with interpretation of the piece and their personal connections to the performance. The questionnaires were sent out to all respondents by e-mail and were completed by all five collaborators and 3% of the audience.

Both data sets underwent qualitative summative content analysis (Hsieh and Shannon, 2005) where the occurrence of thematic language in relation to describing the ideas embedded within the abstract movement and animation was counted and then interrogated in order to try to determine the causes of prevalence of some themes over others. Specific quotes and commentary were presented within the paper to add further depth to analytical findings. The collaborator data set underwent thematic analysis where data was coded inductively by theme and each theme compared across the dataset in a matrix to better understand alignment and diversion of creative intent across the collaborators (Braun and Clarke, 2006). The most prevalent moments were compared to the audience and collaborators interpretations of FFN in order to uncover the extent to which the alignment or misalignment of creative intent affected the audience interpretation of an open work.

3.4.1.1 Critical Review of Research Methodology

The paper has some issues with data collection which affect the validity of the claims. Firstly, data collection took place four months after the performance and thus, raises concerns in

relation to selective recall, telescoping and the likelihood of participants to recall the past in light of their present circumstances (Jupp, 2006). For the collaborators, who heavily invested four months in developing this work, the space between the delivery of the work and data collection is not seen to be an issue as it allows time for reflection. The audience were sent a recording of the performance accompanied the questionnaires to help to prompt their memories inspired by techniques of video cued recall (Raingruber, 2003). This audience data also drew from a small section of the audience (3%) limiting the ability to make claims about the general experience of the audience.

Data reporting within the publication relies upon quantitative accounts of themes identified in the work by participants with qualitative grounding from the data set. The reporting provides insights into the experiences of these groups, in particular the relation between the creative intent of the participants and the impact of this on audience experience, however, formal presentation of the design approaches utilised by the collaborators in order to achieve these outcomes is evident in the data set but could not be accommodated fully within the final publication.

3.4.2 Findings of Publication C

Publication C provides implicit detail into the design of audience participation through interpretation, supported by the experiences of practitioner and a small sample of audience members. The work made collaborative use of space, music, physical performance and abstract animation in order to engage with and invite audience interpretation. Through review of the case studies of animator and chorographer practice and the practice-research production of FFN itself, (drawing from both the publication and original data set) these design techniques are formalised within table 8.

Design Theme	Design Techniques
Thematic ubiquity	Drawing from universal themes to enhance potential for personal connections
Movement as metaphor	Use of individual but interconnected movements which create a whole from chaos Multiplicity of forms to draw attention to movement Contrast between movement and stillness to infer meaning
Sense of progression	Building of intensity, movement and sound to imply “narrative” development Use of different performative spaces to imply development/change Contrasts in colour, syncopation and physical tension to showcase change or development
Disruptions	Syncopation & disruption of visual and aural rhythm Disrupt the barriers between audience and performers Use of atypical performance spaces

Table 8: Techniques to communicate meaning to an audience in an abstract performative work

The evaluation of design techniques utilised in Publication C, like publication B is complicated by authorial intentions of meaning in an interpretative work. The design techniques in table 8, however, have been generalised to minimise the influence of authorial intent. Evaluation of these techniques against the framework provide the following conclusions:

- The use of disruptions can be effective in creating the magic circle and a feeling of being apart together, but trust and shared understanding has to be established so not to break the social contract of playful participation.

- Ubiquitous themes have much in common with thematic framing (publication B). Ubiquitous themes can be used to design the interrelations between different aspects of an artefact, the coming together of which provides a wider interpretative possibility space. This is believed to provide more participant agency than thematic framing. Ubiquitous themes can give participants ownership over the experience, helping the formation of emotional connections, increasing the potential for an imprint or for transformation to take place.

- Linear works limit the support for unpredictability in participation due to their structured nature. Adjustments are required within a linear work in order to support active participant agency beyond interpretation.

- The promotion of a sense of progression has limited transferability in its current state as it relates to linear temporal works. In order to invite participation further, consideration of non-temporal and non-linear structures is required.

- Social elaboration of meaning in a reflective space can help participants to interpret and make sense of their experience.

Evaluation of the design techniques presented by publication C suggests that thematic ubiquity, movement as metaphor and disruption (with careful application) are transferable techniques which can enhance participation through interpretation. These present some commonalities with publication B (i.e. thematic framing and metaphor), strengthening the case for the inclusion of such design techniques in the final framework.

The linear nature of FFN and low participative levels limit the conclusions that can be drawn about the design theme ‘sense of progression’, therefore, this aspect will not be carried forward. The promotion of reflective spaces to make sense of interpretive experiences will be explored in the final frameworks for both artefact and event creation. The case for

consideration of authorial intent and agency is also further strengthened by this evaluation. The detailed evaluation process for this publication can be found in appendix F.

3.5 Publication D: The Game Jam Movement: Disruption, Performance and Artwork.

Figure 6: Images from Development Cultures which aimed to use play and disruption to develop a temporary community. In one playful game jam, participants were challenged to make physical controllers for their games, the results included (left to right): a gardening simulator, a three-player bird poop strategy game and a rowing simulator.

Publication D presents a contextual foundation of literature positioning game jams as academic objects of study and as innovative modes of practice. Design for participation is also considered alongside exploration of the jam in relation to performance art, drawing comparisons to Relational aesthetics (Bourriaud, 2002), Dada, Fluxus, Kaprow's Happenings and Brecht's arrangements. The literature foundation is used as a basis to analyse the design and delivery of a six-month game development workshop series titled Development Cultures (figure 6). Drawing from extensive qualitative data sets gathered from participants, the paper positions the process of game jams as a designed artistic artefact and positions the facilitator as an artist. The paper found that the facilitator is able to support the creation of new meaning and behaviours for their participants through: design of spaces; application of playful constraints; support of participation, social interaction and improvisation; and disruption of conventional practice.

The contribution of this paper to the thesis is the facilitation of playful participation in a series of social events for a potential community of practice, bounded by the constraints of the project.

3.5.1 Research Methodology

The research utilises literature underpinning to support qualitative analysis of datasets gathered during Development Cultures. The data sets include participant observations during two game jam events, the game prototypes created during each event, video recordings of interviews with eight participants (35% of attendees) after the first event, social media commentary made by participants during the second jam event, and reflective questionnaire carried out by four of the participants in the project (9% of attendees) six months after completion of the project.

Observations of participants were recorded through photography and notetaking by the project team and were utilised in the analysis as an additional source to underpin findings drawn from the analysis of social media, video interviews and questionnaires. The games were categorised by genre, input device, mechanics and presentation methods and compared to one another as artefacts of each event as well as in relation to the claims made by participants about innovative practice and discovery.

Video recordings of participant interviews from the first event were transcribed and analysed thematically to identify common themes and outliers across the data set looking specifically for references to the disruption of conventions and new approaches to practice, which were key goals of the event. The first phase of thematic analysis took place using predetermined codes and a second pass drew codes inductively from the data to allow unidentified patterns and concepts to emerge (Braun and Clarke, 2006). The resulting analysis is presented within the academic paper in the section relating to the first event.

Participants in the second event were encouraged to make use of #AGLJam when posting to social media. Some participants collected their experiences after the event in Storify reports, drawing from social media activity. Tweets and Storify articles were thematically coded and compared to draw out specific patterns in the kinds of content being posted and the kinds of online interactions between co-participants or people from out with the jam community

(Saldaña, 2016). Activities were thematically organised and evaluated in order to draw conclusions about the implications of these interactions on participant experiences and socialisation during the event.

The reflective questionnaires were sent out to participants by e-mail, for completion six months after the events. The questionnaires focussed upon the second event, seeking to gain insight into participant experiences and its focus on one mechanic. The questionnaires also gathered information on the participants experiences of game jams in general and the impact of participation in this project on their working practices, (if any). 9% of attendees responded to the questionnaires, ranging in age from 20 - 32 and were a mix in genders. The resulting data sets were organised per question with comparisons between answers made via a matrix to identify themes and outliers (Gray and Malins, 2004). The resulting patterns which emerged were interrogated in relation to the specific aims of the project and literature relating to game jams generally, in order to draw conclusions about the impact of design approaches and event facilitation on the participants.

3.5.1.1 Critical Review of Research Methodology

The research methodology applied to Publication D draws from an extensive body of qualitative data in order to support and underpin design claims. A foundation of knowledge in relation to game jam practices, collaborative work and participatory arts is also presented and is used to draw parallels and support findings of the practice-based research. A flaw in the research process is the small data set in relation to the final reflective questionnaires. This issue was, however, addressed to some extent through analysis of social media data posted after the event by participants. Such data included reflective tweets and documentation made by participants to catalogue and report their experiences. These data sets were analysed alongside formal reflective data to help to provide more generalised results of participant experiences.

3.5.2 Findings of Publication D

Publication D provides valuable insight into the design of events and spaces to support playful participation in a developing community of practice. The project recognised a potential community of experimental games practitioners and academics and provided designed

scaffolding to aid the development of this community. The design techniques utilised within this project to support participation are formalised within table 9.

Design Theme	Design Techniques
Diversifying Community	Foster diverse participation by welcoming differing disciplines and experience levels Curation and expansion of community to balance, disrupt and develop interrelations
Community Led Design and Facilitation	Promotion and delivery of a democratic experience Designing interventions informed by community needs/interests/conventions Transparency in goals and purpose to facilitate community agency, creativity and engagement
Managing expectations	Harness existing constructs (i.e. the game jam) and their accessible community building nature Minimise event expectations to create a space safe for experimentation and improvisation (focus on process)
Disrupting Conventions and Fostering Creativity	Use constraints to focus attention: time, materials, themes and design techniques Co-location & design or disruption of environments to promote creativity and collaboration
Supporting ecologies of participation and shifts in participative modes	Alteration of focus of consecutive events to allow community formation, participation, development, and reflection Schedule different modes of participation throughout individual events to allow for play, participation, knowledge exchange and social interaction Promote social media to support different levels of social comfort

Table 9: Designing for participation in a bounded potential community of practice

Evaluation of the design techniques against the framework showcases that many of the design techniques are well placed to support the development of trust and formation of a community over a series of events in a bounded community. The research drew inspiration from theories of communities of practice in its design, therefore, similarities to Wenger, Snyder and McDermott's Model of Community Cultivation (2002) can be seen. Further evaluation of the design techniques presents the following conclusions:

- Designing activities and constraints from the community can lead to a sense of recognition and ownership over the experience but does not necessarily provide participants with agency. Ownership over the experience can, however, lead to transformation (Poulsen, 2017).

- Managing expectations of the participants prior to and in relation to the expectations of their participation in the event is important to develop trust within the bounded community. This creates a social contract and helps to provide a safe space for experimentation. Utilising existing constructs for participation (i.e. the game jam) can help to provide a known quantity for participants to manage their expectations.

- Constraints can be helpful in focussing participant activity and providing different lenses for meaning making, particularly if the constraints are drawn from the community. This can promote ownership and enact transformation. Providing constraints, however, narrows the possibility space and can in turn limit agency, therefore, a careful balance between providing focus and supporting agency is required.

- Spaces need to exist to allow agency and activity to emerge from the community. Designing tightly formed event schedules leaves limited space for agency and can potentially negate participative power and development of community leaders.

- Bounded events do not support participation beyond their lifespans therefore, ongoing communal activity will only occur should motivated community members see the results of the event as a call to action. The extension of participation beyond a bounded event relies upon such active or core participants (Wenger, McDermott and Snyder, 2002) or the provision of scaffolding to allow the transition of facilitation from the context provider to the community.

The design techniques promoted by publication D are deemed to be robust and transferable to other contexts of event facilitation, and therefore, the design themes: diversifying community; managing expectations; disrupting conventions and fostering creativity; and supporting ecologies of participation and shifts in participative modes will be carried over for consideration in the final participation design framework. 'Community led design and facilitation' theme will be modified to consider balancing facilitation with agency in line with the conclusions raised above. Similarities can be drawn between this design theme and the design consideration 'facilitation and agency' (publication A) suggesting a developing pattern. Within agency, consideration will also be made to the provision of supporting networks or development of a self-sufficient community within the final framework as a route to potential transformation. These issues are also present in publication A. The detailed evaluation process for this publication can be found in appendix G.

3.6 Publication E: Creative Communities: Shaping Process through Performance and Play.

Figure 7: Publication E brought together performing arts and games development through analysis of two projects, Performance and Play (top) and Development Cultures (bottom).

Building on a literature foundation drawing from communities of practice (Wenger *et al.,* 2002; Wenger 1998,) the landscape of practice (Hutchinson *et al.,* 2015), play theory (Sutton-Smith, 2009; Caillois, 1961; Huizinga, 1949), and designing spaces for participation (creative hubs etc.) publication E analyses the design of two case study participatory workshop series in order to identify and critique the use of play to support the community of practice creation. The workshop events studied were Development Cultures (as described in paper D) and the week-long Performance and Play event which sought to bring together creatives from the performing arts and games development (figure 7). Drawing from researcher observations and qualitative participant data, these events were analysed to identify the design techniques used to foster

playful participation and social interaction to develop temporary communities. The paper found that a context provider can utilise playful design strategies to recognise, encourage and support the development of a potential community of practice. A framework for this process was proposed which includes four key stages: build trust, disrupt practice, reflect upon learning and enable agency through drawing creativity and innovation from the community itself.

The contribution of this paper is the formalisation of a context provider's toolkit, a series of design steps which aim to support participation within a potential or developing community of practice.

3.6.1 Methodology

Publication E draws significantly from the datasets gathered for publication D for the Development Cultures project. The data sets were revisited, utilising similar processes to those described in 3.5.1, but through different analytical lenses, focussing upon community development facilitation. Further attention was paid to interactions between participants within and beyond the project through social media analysis and revised analysis of video recordings, reflective questionnaires and observation documentation was undertaken.

Analysis of the Performance and Play project drew from researcher observations as a participant in this workshop, qualitative data gathered during the workshop including documentation of: the goals of each participant at the beginning of the week; declarations of interests; questions and specific issues of participants in relation to bringing performance and games together; and plans for future work collected at the end of the workshop. The research data set also included audio interview recordings with two participants of the workshop (10% of total attendees) which took place over the course of the week.

Observations of participants were documented in note form during and after the event and were used, alongside the schedule of events, to provide insight into the effectiveness of different modes of activity in facilitating discussion, social interaction and shared meaning development. Observations were reviewed in terms of the specific facilitation modes utilised

and the extent to which participants voiced their opinions or experiences of these modes in reflective discussions throughout the event.

Text based data was organised thematically making use of a mix of qualitative summative content analysis (Hsieh and Shannon, 2005) and thematic analysis (Braun and Clarke, 2006). Qualitative summative content analysis allowed for reporting of quantitative themes across the datasets, particularly in relation to the specific interests and plans of the participants, whilst also allowing for qualitative engagement with the content to understand how event facilitation may have altered these over the workshop. Audio interview recordings provided limited insight due to the small set of participants, and thus, the content, once transcribed and thematically analysed, was used to corroborate and reframe (where appropriate) observations from practice and text-based data analysis.

Findings from each project is reported individually within the paper. Synthesis of these findings was undertaken to identify the modes of participation which were deemed to impact or affect the participation and social relations of each group of participants (whether positive or negative). The resulting analysis, once contextualised by the body of literature relating to communities of practice, was formalised in a context providers tool kit which aimed to provide a series of participative design tools to support a developing community of practice, whether within or across disciplinary boundaries.

3.6.1.1. Critical Overview of Research Methodology

The research process for this paper is deemed to be fairly rigorous and robust in relation to the Development Cultures project. The research process for the Performance and Play project presents a similar reliability and transparency, however, the data utilised is from documentary sources (i.e. documentation created by participants in the event) and secondary sources (i.e. observation of participation and interpretation of their responses to participation) rather than being directly drawn from the participants themselves.

It was not possible to gather data from the participants beyond the bounded nature of the event. The reliance on documentary and secondary sources limits the claims that can be made in relation to the impact of participation upon participant practices, however, this was deemed the most reliable representation of this project given the limitations of the research context. Whilst recognising these minor issues the research is believed to provide robust insight into event design and facilitation through researcher experience, observation and analysis.

3.6.2 Findings of Publication E

Publication E, in presentation of the context provider's toolkit provides a formal outline of design techniques which can be used to promote playful participation in events within and across different specialist practices (figure 8). The toolkit is designed to support an unbounded community over a number of interactions, through providing longitudinal facilitation guidance for a context provider aiming to support the development and slowly hand responsibility over to a community of practice.

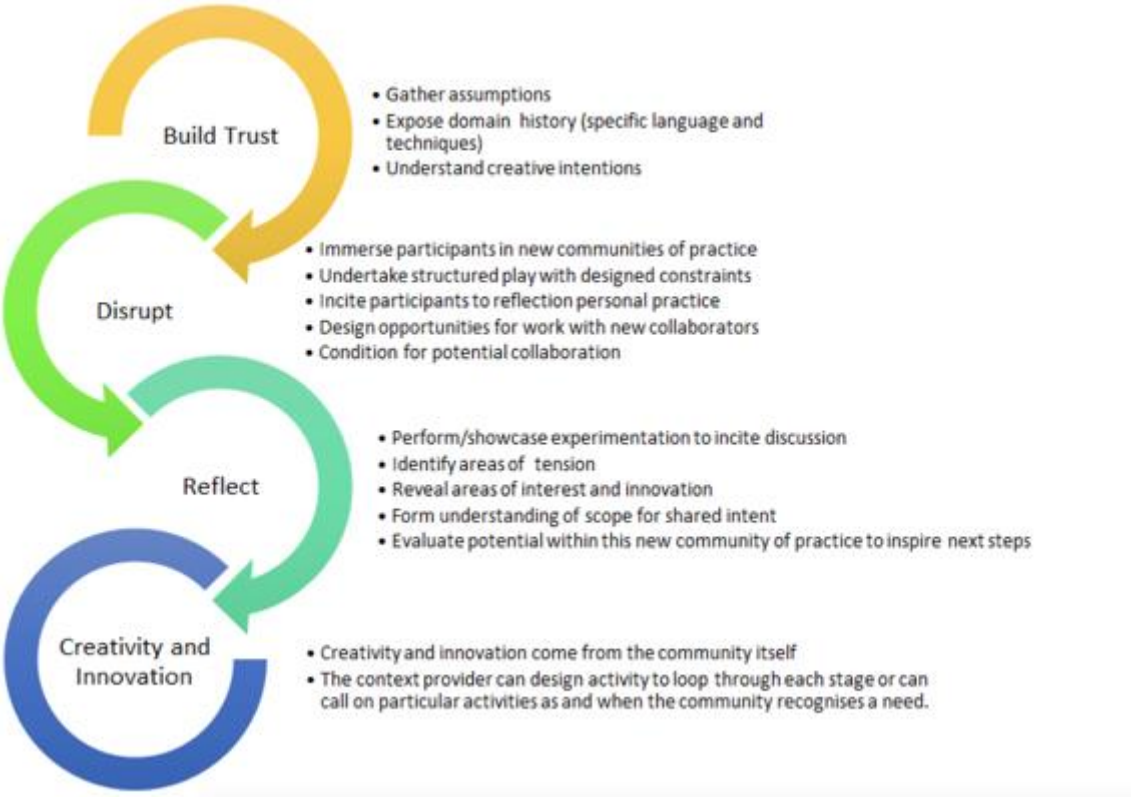

Figure 8: The Context Provider's Toolkit

Evaluation of the context provider toolkit frames it as a flexible model for participation which allows for small steps towards development of facilitated agency within a community of participants. The toolkit, however, relies upon longer engagement in a bounded community than one short event, and thus requires some modifications to be transferrable to a range of contexts. To achieve this, it is proposed that the four main steps remain the same, but that the sub-steps are applied at a context provider's discretion. Evaluation of the toolkit also provided further insights conclusions:

- The context providers toolkit promotes regular discussion and reflection with the community in order to continuously negotiate interests, needs and areas of tension to allow design for the community (as with publication D) and development of awareness of when to let the community lead participation design. The model attempts to hand over control for participation to the community by helping them identify commonalities and develop frameworks for themselves.

- Facilitated discussion allows the community to take an active role and develop shared language and understanding. This embeds trust and enhances social bonds in the community.

Evaluation of the context provider's toolkit highlights significant overlap with techniques identified in publications A and D. This model also helps to address some of the deficiencies previously identified within these publications by providing some guidance for participant led agency within the fourth step, 'creativity and innovation'. This step is lacking in design techniques and is somewhat underdeveloped, however, the toolkit as a whole begins to shed light upon moving from a facilitated participative event to a participant led event, which, in the context of this research, is believed to lead to transformative experiences. The structural elements of this toolkit are to be considered for the final framework as they are deemed

creating a transferable model of participation design for events. The detailed evaluation process for this publication can be found in appendix H.

3.7 Publication F: Playing the Museum: Participation, possibility and play in curating meaningful visitor experiences.

Figure 9: A group of participants exploring different ways to engage with games at Thryn Henderson's workshop, 'Settings to Sit to' at Feral Vector 2017.

Publication F presents a critical review of literature relating to participation in a museum (Simon, 2010) and artistic context (Bishop, 2011) in order to address issues with the positioning of video games within museum contexts as cultural artefacts. Theories of play (Caillois, 1961; Huizinga, 1949) and game design (Sharp, 2015; McGonigal, 2012; Lantz, 2010; Flanagan, 2009; Frasca, 2007; Rodruigez, 2006; Salen and Zimmerman, 2004; Zimmerman, 2003) are proposed as lenses through which the curation of gallery spaces can be developed, particularly the notion of the 'possibility space" (Spector, no date, cited in Squire and Jenkins 2002). To address tensions in authorship presented by positioning co-created video games works in an authored curatorial space, the publication promotes participation through the use of video games as social objects (Simon, 2010) or social technologies (Flanagan, 2009) around which social interaction and meaning making can occur. The goal of this approach is to embrace the possibility space of playful participation. Participation is also promoted through the study of

techniques utilised by participative games events such as alternative festivals, game jams, and role playing (figure 9).

The contribution of this paper to the thesis is the formalisation of design techniques to enhance playful participation and social collaboration in meaning making in a social context.

3.7.1 Research Methodology

Publication F undertakes a process of literature review, drawing from game design and participatory theories (in relation to art and the museum). The literature provides a foundation upon which the tensions presented by the active participation in computer games as form to traditional notions of the gallery are explored. Research into participatory events and festivals around play, games and participation is utilised to promote potential modes of participatory practice that could ease the positioning of video games in institutionalised contexts. The research draws from literature sources and event documentation (in the form of official event websites and press packs) in order to inform the developing theories around play and participation in video games within the museum.

3.7.1.1 Critical Overview of Research Methodology

The research methodology used within this publication is deemed to present no issues. As a theoretical paper it utilises literature to support clarification of research issues and draws from relevant theories and existing practice in games and participative event design to make recommendations for the enhancement of the identified issues.

3.7.2 Findings of Publication F

Publication F provides theoretical exploration of issues around participative media as positioned within social contexts. It also recommends a number of playful design interventions which can invite greater participation and social interaction. These techniques are summarised thematically within Table 10.

Design Theme	Design techniques
Blended Spaces Embrace Possibility Spaces	Activation, Authorship and Community Provide spaces for behaviours and meaning to emerge and hand over authorial control Recognise (and reciprocate) co-creation of meaning: co-create discourse Build scaffolding for meaning to come from participation
Provide Scaffolding	Playable spaces empower possibility spaces Provide frameworks which promote sociability around objects Use play as a system to organise social meaning making Utilise “unit operations” to build appreciation of the complex whole (Bogost, 2006)
Meet the needs of the community	Design community relevant ecologies of participation Provide spaces to issues and the relation of the self to the issue Provide invitations which cater to the diverse and the ever-changing population
Accessibility and Legitimacy	Lower barriers to entry - utilise accessible techniques to engage with complex issues Create welcoming atmosphere and provide diverse invitations Leverage existing spaces and contexts for play Disrupt locations and preconceptions

Table 10: Design techniques to enhance participation in formal social contexts

The design techniques promoted within publication H echo many of the principles identified across publication A, D and E and similarly echoes the model of community cultivation in places (Wenger, McDermott and Snyder, 2002). The unique participatory design features drawn from

this publication, however, include the acknowledgement a loosening of authorial control (which has been a tension presented within many of the previous publications), the direct use of play as a system to help organise meaning and the responsibility for scaffolding being handed over to the participants with facilitated support. These tensions have presented themselves elsewhere in the research, however, they are concretely explored within publication H and design recommendations are made to support their application. Further evaluation of the design techniques reveals the following conclusions:

- The design techniques acknowledge that communities will change and develop within a participatory space and utilises permanent, semi-permanent and temporary invitations to play as well as supporting ecologies of participation across these three categories.

- Within this recognition of the fluxing nature of attendee population, the design techniques also recognise the micro-communities which exist in the space formed through prior social relations (i.e. friendships, relations) and around the invitations to participate (i.e. social objects, workshops etc.). The consideration of 'accessibility and legitimacy' along with supporting the 'needs of the community' help to design programmes which create diverse invitations to play, to promote social exchange, diversify experience and create value, enhancing the possibility for individual or micro-community transformation (Benedetto, no date).

- Authorial control is relinquished through selection of materials which provide wider horizons of participation and possibility spaces for the participants. This cannot be to the detriment of cohesive experience and has to be balanced with the subject matter. Thematic framing must be provided around which, careful curation of participatory invitations is developed. A modification to the design techniques promoted by this publication is thus proposed, to position 'authorship' as a fifth key design approach.

- The provision of rhythm for a community within a bounded space can be provided through ecologies of participation, consideration of programming and design and curation of participative space. Rhythm can be applied to bounded and unbounded play situations and is not limited to the unbounded. Consideration of event rhythm is thus suggested as an additional consideration under the larger design technique of 'providing scaffolding'.

- Facilitation requires open design and also maintenance, not only of participant experiences, but also of invitations to play, which may be subverted through dark play and appropriation by participants. Digital invitations are particularly at risk.

The evaluation of publication H therefore promotes that five design techniques be considered, in partnership with the results from publications A, D and E to form a final framework for participation in events. These are: Blended spaces/embrace possibility spaces; provide scaffolding; meet the needs of the community; accessibility and legitimacy; and authorial Control. Furthermore, the consideration of levels of facilitation and maintenance, the use of varying levels of permanence in invitations to further support ecologies of participation, consideration of bounded rhythms of participation and programming for micro-community cross-pollination are also promoted for consideration.

Overlap in techniques between the different publications was acknowledged within the full evaluation of this publication (appendix I), and thus will be used to aid the organisation and prioritisation of themes in the synthesis of the final model.

3.8 Practice Publication G: Ola De La Vida

Figure 10: Ola De La Vida being played by participants at Games are for Everyone in Edinburgh, UK in April 2017.

Publication G presents a critical review of the design of a three-player social play game, Ola De La Vida (ODLV) (Smash it Open and See What's Inside, 2017). The publication proposes that a game can be designed to enhance its social potential and participation through design for the formation of a temporary community of play made up of active participants, semi-spectators (both internal to the game and external) and spectators. These claims are contextualised through designer reflection and analysis of player experience both within controlled laboratory setting and in social play contexts. The findings claim that participation in a game can be

enhanced through the design of: spectacle; digital gameplay; physical gameplay; and widening of the magic circle to include active and passive audience members.

The contribution of this paper is the presentation of practice-based design approaches to enhance play and participation around a social play object and their ability to make temporary social connections.

3.8.1 Research Methodology

Publication G presents a critical review of design development of a social play artefact informed by a focus group interview with the developers. The design claims drawn from the developer focus group are, in relation to the research questions, assessed against two sets of user data, formal user focus group testing data and anecdotal play party participant data.

A focus group interview was undertaken with the four developers to glean insight into the social play design techniques employed by the team. The focus group questions focussed upon design approaches, the links between physical and digital design, the perceived player and spectator experiences and the potential community forming aspects of the game. The developers also discussed their observations of players interacting with ODLV during two play parties: the play party after the Global Game Jam and Independent Game Developers Association (IGDA) local Play Party. The interview data was transcribed and thematically analysed in order to identify and contextualise the design methods that contributed to the resulting social play aspects of the game. The findings of this process were contextualised around the concepts of social objects (Engeström, 2007), expressive design (Márquez Segura and Isbister, 2015; Reeves *et al.*, 2005), and collaborative play (De Koven, 2011; Huizinga, 1949).

Audience testing focus groups were carried out to test the design claims made by the developers and to glean new insights into the role of the game as a bounded social object. It was deemed difficult, in a live play party setting to gather reliable in-depth player experience data, thus three play testing sessions were carried out in the university where participants in

small groups were invited to play the game and take part in a discussion. Groups of 18, 15 and 4 participants made up these sessions, all attendees were students at the university and were between 18 and 40 years of age. Few of the members of the groups knew each other and this was deemed helpful, not only in better simulating the dynamics of a social play situation, but also avoiding any implicit information that may not be expressed by groups who know one another well (Flick, 2014). Focus group discussion was semi-structured, seeking to draw information on: participant impressions of the game, their gameplay experience, how their experience differs depending upon player position, the role of the poncho and spectatorship. Discussion was led by the facilitator with emerging points being explored through secondary unplanned questions before returning to the structured questions. This allowed previously unconsidered dimensions of experience to emerge and be corroborated (or debated) by participants. The discussions were audio recorded and analysed. Thematic analysis was undertaken with codes being inductively drawn from the data, rather than mapped onto the data to allow new perspectives upon the game play experience to reveal themselves within the data, rather than searching only for data which supported or disproved the design claims.

An open call for feedback from players who played the game in a play party context was made via social media. Direct email invitations were also sent to past players, where contact information was available, to invite their comments. Respondents were invited to submit two to three sentences which describe their thoughts of the game play experience and/or what it was like to watch game play or just their memories of the game in general. Twelve such responses have been gathered to date and have undergone thematic analysis.

Both sets of participant data have been utilised to firstly identify behaviours encouraged by the game which were not previously considered within the research and secondly to assess the effectiveness of the participative design techniques utilised by the creators. Documentation of ODLV can be found in appendix J.

3.8.1.1. Critical Overview of Research Methodology

The focus groups provide concrete data regarding game dynamics, interactions and play experience against which design claims can be measured. The academic setting of the focus group allowed for more lengthy discussion of the game than is possible in a social play setting but also impacted the authenticity of behaviours and potential for spectatorship due to the formal setting and small player numbers. Previous attempts to gather feedback in a social play setting were unsuccessful due to the nature of the events, thus a focus group setting was selected as the most appropriate way to gather more in-depth insight. Anecdotal participant feedback provided via social media is used to address the limitations presented by the formal environment of the focus groups, and the difficulty of capturing feedback in a social play setting. The resulting anecdotal feedback provides some insight into authentic behaviours and spectatorship "in the wild" (Chamberlain *et al.*, 2012), but is at present a small sample, limiting the generalisations that can be made.

3.8.2 Findings of Publication G

Publication G analyses the design and testing of a social play game. The techniques used to invite participation and aid the development of a temporary community around the game have been summarised in table 11.

Design Themes	Design Techniques
The Curation of Spectacle	Scale and conviviality to draw interest and create a space for spectatorship Ephemerality causes curiosity and invites participation Mimetic controls and performative presentation Satisfying Game feel to enhance embodied experience and promote positive play experiences Accessing Emotional Contagion through spectatorship, convivial themes and ridiculous design
The use of physical properties to heighten social potential	Play as performance Staging- invites spectators whilst anonymising players Using costume to create a sense of: anonymity, team/connectedness, enthusiasm and buy-in Physical contact to enhance awareness of other players / teamwork and camaraderie
Design for internal semi-spectatorship	Shared goals (camaraderie and collaboration) Dependency in scoring points Different workloads and game rhythm to allow strategizing
The widening of the magic circle through external semi-spectatorship	Space to learn the game (preparing for play or lowering barriers to play) Space for meta-narrative between spectators Space to support or distract active players Space for competitive observation Space for community to form through such exchange

Table 11: Design techniques to support community formation through game design and spectatorship

Evaluation of the design techniques utilised in the creation of ODLV suggests that the four key approaches are successful in creating bounded community play experiences and provide some opportunity for transformation a small scale (typically for the individual). The game also leads to the emergence of unpredictable behaviours including appropriation and dark play due to its possibility spaces which can reveal players' personalities and values. The evaluation also provides the following conclusions:

- Spectatorship is central to the development of trust and the invitation to participate. It also widens the magic circle of the game, inviting spectators to take an active role in supporting players' performance, learning through watching and coaching, which create a greater sense of shared meaning, camaraderie and sense of being apart together.

- The physical nature of ODLV reveals a great deal about players through their approach to negotiating one another's forms. This can strengthen social bonds and promote camaraderie within the magic circle. It can also shift player perspectives of one another should their play approach be rather extreme (i.e. forceful physical repositioning of a co-player). Player perspectives can also be transformed through the unconventional use of hardware and the physical nature of the play experience in relation to the possible forms of video games.

- Novelty is key to achieving participation in the game and also to unlocking the potential for transformation through physical play experiences. Novelty should be positioned more prominently in the design techniques than it does at present.

- The use of spectacle and spectatorship work very well for physical multiplayer experiences but may not translate to more contemplative authorial works. Therefore, the themes of a work and their 'appropriateness' for consumption within social play experiences should also be considered as a design technique to improve transferability to different contexts.

Evaluation of the design techniques of publication G thus suggest that the four existing design techniques be carried over for consideration in the final whilst being complemented by consideration of novelty as a participative strategy and the consideration of theme in relation to 'appropriateness' for multiplayer consumption in a social play environment. The detailed evaluation process for this publication can be found in appendix K.

3.9 Practice Publication H: Northern Lights Ceilidh.

Figure 11: A still from the opening animation of NLC that aimed to set the scene for the event which blended Scottish traditions with technological augmentation to create a modern social dance event (Parker and Locke, 2014).

Publication H presents a critical review of the design and delivery of a ceilidh event which used digital mediation in order to invite the participants to co-create the event aesthetic and to foster social connections. From reflections upon the design process, creative intent, and analysis of semi-structured interviews audience members, the publication found that ceilidhs naturally promote participation, social interaction and the creation of social connections regardless of digital mediation. The paired nature of the dances, a sense of responsibility of participants who know the dances to share their knowledge and the preconceived expectations of ceilidh behaviours are motivators behind the social exchange fostered by the ceilidh setting. Technological mediation was found to provide novelty which enhanced social exchange and increased the appeal of the ceilidh tradition. Digital augmentation was found to enhance accessibility and spectacle without distracting from the main act of ceilidh dancing.

Although NLC was an event, it has been positioned within this thesis as an artefact, as the authors practice-based contribution was primarily the design of artefacts which acted as playful interventions. The contribution of this paper to the thesis is the formalisation of design techniques for playful augmentation of participant experience, agency and community formation. Documentation of NLC can be found in appendix L.

3.9.1 Research Methodology

Publication H presents practitioner reflection upon the design of digital playful artefacts to enhance participation in a ceilidh event. The designer used digital mediation to invite participants to co-create the aesthetic of the event and also, to enhance social interaction. The publication outlines the iterative design process for these invitations to participate drawing from reflective practice, design documentation, work-in-progress prototypes, event photography and filming.

Audience feedback interviews were undertaken in order to evaluate attendee participation, awareness (if any) of contributing to the aesthetic of the event and the extent to which they made connections or felt part of a temporary community during NLC. Semi-structured interviews were carried out in person or via video call with 5% of the event attendees. They were aged 20-32, and worked in games development, were studying creative arts or were digital arts academics.

The interviews were transcribed for analysis and were organised, in a matrix, by question to allow direct comparison of participant experiences and identify gaps in the research data (Gray and Malins, 2004). Commonalities across the data set were identified and compared to the intentions of the designer. Further analysis was undertaken to identify causal relationships for these commonalities and to determine the influence of digital mediation on participants' experiences. In analysis, contextual factors were identified as influencing the responses within the data set. These were interrogated and provided insight into liminal and ritualistic influences participation.

3.9.1.1. Critical Overview of Research Methodology

Methodological issues affect the robustness of the data set. Firstly, interviews took place almost one year after the event which presents issues of selective recall, telescoping and the likelihood of participants to recall the past in light of their present circumstances (Jupp, 2006). The data collection process took this into account both in delivery and question design. Participants were invited to watch a short trailer which summarised the event prior to participating in the interview as a modified form of video cued recall. The research questions sought to gather information regarding the imprint the event has left upon the participants, and thus probed what participants remembered and why.

The participant data also draws from a specific micro-community in the event. 80% of participants took part in the DtbD competition and thus were part of an existing community of 75 people who attended the event. A further 125+ people were also present, but it was not possible, due to the bounded nature of the event, to draw responses from participants beyond those with direct links to the competition. The data sample is also quite small and thus further limits the generalisations that can be made about participative design for communities.

The limitations presented by participant data provides positive elements for analysis, however, as it was possible to study the connections the participants made beyond their existing connections within the community and also to study the impact of transitional qualities on participation, as for 80% of the participants the event marked the end of the competition, their studies and their time in Dundee. This liminal quality, when combined with the ritualistic nature of the event provides valuable data for the implications of participation in bounded communities and the embedded participative qualities which exist in ritualistic events.

3.9.2 Publication H Findings

Publication H presents analysis of the design and participant experience of playful augmentation of a traditional ceilidh which aimed to empower attendees to co-create the event aesthetic and enhance social connections. Analysis of the ceilidh tradition, the liminal

qualities of the event and playful digital augmentation provide a series of design techniques for fostering participation which is formalised within Table 12.

Design Theme	Design techniques
Leveraging existing participative social contexts	Primes attendees to participate before arrival which can enhance/decrease buy-in Provides scaffolding for participation (i.e. ritual) Embeds knowledge exchange (i.e. insiders and outsiders) Provides social object for interaction
Designing novelty to enhance appeal and social exchange	Creates curiosity and invites participation Provides comfort/support/relevance to specialist interests Use of unusual artefacts to promote social exchange Use of abstracted media to promote social elaboration of meaning
Designing for ecologies of participation in co-creation - Enlivening participants as the artefact	Accessibility through ambient co-creation Active co-creation possible digital spectacle creation to enhance spectatorship Abstracted interstitial animations provide spaces for contemplation, interpretation and collective discussion Create a rhythm for the event to manage participative shifts

Table 12: Design techniques to foster participation, co-creation and social connections.

The framing of NLC as an artefact rather than an event provides some complications in drawing findings. The design techniques applied within the publication relate to both the design of animations and live visuals and the design of a participative framework in an event setting. In reviewing NLC as a playful event, many of the design align to those promoted by publications A D, E and H, particularly 'supporting ecologies of participation' and 'leveraging existing social contexts'. NLC thus provides additional support for these participative design techniques.

NLC was imbued with ritualistic qualities through references to tradition and also through its contextual setting as a transitional time for many participants. The use of ritual as a participative design technique demonstrates some promise which could be considered under in event design under 'leveraging existing social contexts'.

In evaluating NLC as a participative artefact, existing social contexts and ecologies of participation are also seen to have beneficial contributions to the design of participation and thus remain within the design frameworks for artefact design. In the case of NLC, the artefacts being studied are the interstitial animations and the live visuals which could be augmented by the brooch, participant movement and audio input. Evaluation of the findings of publication H present the following conclusions:

- Varying access to artefacts within a participatory space can imbue artefacts with ephemeral qualities and enhance their imprint upon participants.

- Artefacts which require participation to be enacted must ensure participants are aware of their potential, the level of instruction, however, can vary depending upon context.

- The combination of existing models of practice in new ways provides a level of familiarity and an accessible invitation to participate, whilst also evoking curiosity and the potential for new experiences. Such approaches can provide new lenses for experience interpretation. Accessibility to the artefacts must be balanced with curiosity, to ensure an intervention is not so accessible to be uninteresting or too obscure to be accessible. This balance is promoted as additional participation design technique.

- Artefacts in NLC temporarily evoked enhanced participation and agency, however, the complexity of the main act of ceilidh dancing meant that participants could not participate in both dancing and appreciation of their co-creation of the event. Spectators gained the most benefit from co-creation as they could enjoy the spectacle. There is, therefore, a need to consider complexity and reception, in designing participation. More specifically, the impact of the designed actions on their ability to be appreciated by the interactor.

Evaluation of the design techniques to enhance participation around the artefacts in NLC provides mixed results. Participation design was not wholly successful within NLC, however, the most promising design techniques for participation from this event are deemed to be: balancing accessibility with curiosity (a combination of ecologies of participation, designing for novelty and invitations to participate), balancing complexity with reception (greater appreciation of modes of participation and spectatorship), and using ambiguity to incite collective meaning making. Through the evaluation process (appendix M) and in light of the conclusions presented above, the design techniques for consideration in the final framework of participative artefact have been revised, as described in table 13.

Design Theme	Design Techniques
balancing accessibility with curiosity	Use open invitations (i.e. little technical know-how, indirect patterns of cause and effect). Use known models to set expectations and provide scaffolding for participation. Draw from ritualistic qualities or specialist knowledge to enhance cross-pollination/social interaction. Appropriate known artefact forms to invite curiosity and participation. Vary access to artefacts for participation to create spectacle and foster accessibility: Provision for entire experience, semi-permanently, or temporarily.
balancing complexity with reception	Use of complex, interdependent, indirect or fast paced modes of interaction to allow spectators to appreciate participants' interaction. Use of contemplative, independent, direct or slower paced modes of interaction to allow participants to appreciate interaction.
using ambiguity to incite collective meaning making	Use of unusual objects to promote social exchange Use of abstracted media to promote social elaboration of meaning Use participants to create a physical-digital spectacle to enhance spectatorship and incite discussion

Table 13: Revised design techniques to foster participation, co-creation and social connections.

3.10 Chapter Summary

Within this chapter each publication is introduced, and the author's contribution is summarised, both in terms to the creative development of practice-based projects and in relation to the theoretical contribution made by the author to the publication.

Each publication is presented as a case study which begins by summarising content and contribution to the research. The research methodology used within each paper is presented and interrogated. For one academic publication (Publication A) the methodology and findings of further analytical work is summarised. The findings of each publication in relation to design of participation is then formalised in a table of participative design techniques which is evaluated against the evaluative framework underpinned by literature, practitioner experience and data gathered from expert practitioners. Each case study concludes with recommendations for design techniques which be carried over for synthesis into the findings of this thesis: two final design for participation frameworks, one for events and one for artefacts.

Chapter 4: Findings and Discussion

Drawing from the findings of each publication, this chapter will focus upon synthesis of the varied participative design techniques into the final participative frameworks. The outcome of this process is presented in four sections: a participative design framework for event facilitation, a participative design framework for artefact creation, a model of 'un-designable' factors of participation, and reflection upon the impact of playful participation design.

4.1 Frameworks for Participation Design

The frameworks for participation design were created through a process of thematic coding and synthesis of the recommendations made by each publication case study utilising the process described in 2.2.4. Each framework aims to present overarching design themes which designers and context providers can utilise to aid the design of participation in their work, minimising potential social, practical and design barriers in order to create playful interventions for their participants and ideally developing temporary communities of play. The frameworks, one which focusses upon events and one which focusses upon artefacts are presented in the following two sections.

4.1.1 Participation in Events

The design for participation in social playful events framework is presented in table 14. It has three core design themes which frame and act as an organising structure for design aims and underpinning design techniques.

Thematic Framing	Overall Design Aim	Design techniques informed by publications
Trust & Value	Prepare Participants for experience	Managing expectations (Publication D) Curation and Gatekeeping (diversity in space provision for participation) (Publication A) Acknowledge the ecosystem of events and design with this as a consideration (Publication A) Legitimising approaches (Publication A, and F) Consider level of agency versus level of facilitation (and design intentions) and provide clear expectations for participants prior to participation (Publications A, D, E and F)
	Create an open and safe space for experimentation	Comfort and Discomfort (confidence to expand perspectives) (Publication A) Build Trust (Publication E)
	Support the creation of shared understanding	Accessibility and Legitimacy (Publication A and F) Insiders and Outsiders (Scaffolding to support community expansion) (Publication A) Acknowledge participation in other communities (within and out with the event) and experiences (Publication A and F)
	Promote value through supporting practice	Meet the needs of the community (Publication D and F) Provide Scaffolding (publication F) Supporting ecologies of participation and shifts in participative modes (publication D) Provide varying levels of permanence to support ecologies of participation (Publication F)
Disrupt	Create safe spaces for participant-led experimentation	Blended Spaces /Embrace Possibility Spaces (Publication F) Consider the impact of ritualistic and liminal qualities on participation (Publication H)
	Disruptions to question and invigorate practice	Diversifying Community (Publication D) Disrupting Conventions and Fostering Creativity (Publication D) Disrupt (Publication E) Create a rhythm for the event which supports disruption and shifts in participative modes (Publication D, E and F)
	Promote invitations for cross-community collaboration through diverse invitations	(Publication A and F)
Agency and/or Ownership	Facilitate reflection to evoke transformation	Reflect (Publication E and F)
	Provide spaces to empower participant led facilitation of participation (Agency)	Creativity and innovation (Publication E) Facilitation and Agency (*Unpredictability* as a tool support participation*) (Publication A, D and E)* Authorial Control (publication F) Promotion of agency to motivate activity beyond the bounded event (Publication A, D and E)

Table 14: Final Framework for the Design of Participation in Playful Events.

The Framework for participation design in playful events draws from three main themes: the development of trust within a participative social grouping, the disruption of their activity and the development of agency and/or ownership over the experience.

4.1.1.1 Trust and Value

Trust is necessary in order for participants to be drawn to and buy-in to an experience; it is the first stage in not only attracting them to participate (by making event intentions clear, appealing and valuable) but also in being able to unlock the transformative aspect of playful participation (as described by theme two: disruption). Preparation of participants before the event is highly important not only in the image promoted to the participants but also in the vision of the context provider. They must determine why and how they will facilitate participation and to what extent they are willing to invite participant agency and let go of authorial control. This model promotes participant agency over authorial intent and requires that the context provider embrace unpredictability within event facilitation and in relation to the outcomes of the event (i.e. it will not be possible to predict what the outcome will be). Regardless of issues of agency, context providers should consider the ecosystem of events and the ways in which their event offers diversity in invitation and experience (promoting value to participants). It may be that there is a potential community or need which is not being catered to locally (i.e. Playbox and Arcadia) or nationally (i.e. Feral Vector) or an interest in creating a worldwide movement (i.e. A MAZE.).

4.1.1.2 Disruption

Disruption is necessary in order to promote the potential for new perspectives to be formed. Challenges to existing thinking, practices and approaches can be absorbed by a temporary play community given that trust has been developed (i.e. social contract and formation of the magic circle). The magic circle may be drawn around the participants of an entire event or around a series of micro-communities participating in the range of playful interventions provided within an event's programming. Safety and trust allow for disruptions to influence the emergence of questions, insights and new perspectives. Without trust however, participants may be uncomfortably challenged, unsettled and alienated.

As well as “designed” playful disruptions of practice and thinking, disruptions can emerge from social interactions, where the individual participants become the disruptive factor. The design of a programme with diverse activities in larger bounded communities will encourage individuals to participate across many micro-communities bringing their unique perspectives, and experience into the play situation. No two play occurrences are ever the same and varying participants within a play situation helps to enhance unpredictability of experience, evolving social discourse and the potential for further experimentation with meaning, behaviour and perspectives within play. Encouraging cross-pollination across micro-communities can help the context provider to unlock the participants as the media for potential transformation of one-another.

4.1.1.3 Agency and Ownership

Developing agency and/or ownership is a necessary step for participants to fold their experiences into their learning and views of the world (Dewey, 2009). The promotion of reflection, whether facilitated within the event or self-directed by participants through the provision of reflective spaces (i.e. social breaks, lunch times, promotion of social interaction after an event) allows for sense to be made of the experience and for participants, individually or collectively to determine the value of the experience to them (Schön, 2016; Kolb, 2014; Dewey, 2009). The development of ownership over an experience is believed to be an integral step towards potential transformation as it allows the participant to create a personal link between their experience, the meaning they have created in play and its implications upon the ‘real world.’

Agency is actively encouraged in playful interventions, in that a designer creates a framework (i.e. rules or structure) and allows the unpredictability of the participants to push up against that framework creating unpredictable outcomes (Zimmerman, 2003). Encouraging agency beyond the play situation (through ownership over the experience) can evoke individual or collective action. In a playful intervention, collective action is motivated by the identification of shared values, interests and needs between the individuals in the play situation; their commonalities and new perspectives formed through play may build energy and evoke action

beyond the bounds of facilitated participation. This will not happen with every community, but where shared interests are strong enough, can lead to change and transformation on a collective level, rather than individual. Context providers can support this in helping to build trust, connections, and social bonds. They can also, through the introduction of disruptive interventions promote curiosity, questioning and collective experimentation through play.

4.1.1.1 Framework Limitations

The framework of participation design in events has limitations in its design and application. Firstly, the aim is to support, facilitate and empower the participants to question, experiment and reflect upon different ways of being through play, in order to identify and address needs and issues in their own lives, community or society more broadly. Should a context provider have authorial intent or a particular motivation to facilitate an event, it is unlikely that the level of unpredictability this model promotes through play and participation will suit their specific needs. In this case, the framework may not be appropriate or may need modification to narrow the spaces of possibility and agency encouraged by the framework.

The framework, although drawing from practice-based research findings and expert practitioner interviews, is theoretical and requires testing across a range of contexts to fully ascertain its reliability. It does not provide concrete design techniques, but rather a range of considerations which a context provider must assess in designing their event to support participation. Participation design for an event cannot be one-size-fits-all and thus, judgement must be used in the application of the framework to the specific context of the event, the needs of the target audience and the motivations of the context provider.

Play is inherent in the design approach and invitations to participate within this framework, but its design and application is not explicitly stated. Play theories and ideas underpinned the publications and synthesis of this framework, but, in order for it to be fully enacted as a participatory technique, a playful mind-set is required by the context provider in their design approach.

In promoting participant-led transformation and supporting the unpredictability of play, the application of this framework is also called into question. Many context providers carry out work supported by funding, underpinned by aims and objectives. This framework does not guarantee outputs and instead promotes the use of play to empower individuals, to form bonds and potentially empower communities. The framework challenges funding and impact measurement models and may affect funding support and event sustainability in application.

4.1.2 Participation in Artefacts

The design of playful participation in artefacts three core design frames which are summarised, with their supporting design aims and underpinning design techniques in table 15.

Thematic Framing	Overall Design Aim	Design techniques informed by publications
Accessible entry points	Appropriate known quantities	Thematic ubiquity and framing (Publication B and C) Balance accessibility with curiosity (Publication G and H) Novelty as a participative strategy (Publication G) Scarcity as a participative strategy (Publication H)
Play communities within the magic circle	Design for spectatorship	The Curation of Spectacle (Publication G) Consider theme 'appropriateness' for multiplayer consumption (Publication G)
	Support Social potential	The use of physical properties to heighten social potential (Publication G) Balance complexity with reception (Publication H) Widen the magic circle through external semi-spectatorship (Publication G)
Agency and Imprint	Provide challenge	Provide a space of possibility through content and interaction (Publication B) Balance complexity with reception (Publication H)
	Invite Interpretation	Metaphors for meaning (Publication B) Movement as metaphor (Publication C) Contrast and intensity (Publication B) Disruption (with careful application) (Publication C) Design for internal semi-spectatorship (Publication G)
	Encourage collective elaboration of meaning within and beyond the magic circle	Promote reflective spaces to make sense of interpretive experiences (Publication C) Use ambiguity to incite collective meaning making (Publication H) Balance complexity with reception (Publication H)

Table 15: Final Framework for the Design of Participation in Playful Artefacts.

The framework for participation design in playful artefacts draws from three main design themes: accessible entry points; play communities within the magic circle; and agency and imprint.

4.1.2.1 Accessible Entry Points

Providing accessible entry points suggests that the artist or designer considers the first impression of the participative work and the extent to which it provides the participant with interaction guidance. It may be the case that very little guidance is used, that models which are familiar to the participant are used or that subtle framing is provided to help the participant to step into the world of the artefact (as demonstrated by the interpretation of the coming together of different media in FFN for example). More direct invitations may also be used such as "how to play" style instructions or curatorial texts (Gramazio, 2017). The aim is to provide an invitation that is familiar whilst tapping into the curiosity of the participant to encourage them to participate (The NLC brooches and the use of conventional hardware in unconventional ways in ODLV showcase such approaches). Combining the familiar with excitement or novelty in artefact design can lower barriers to entry, enhance accessibility and also create an invitation which cannot be turned down by the participant due to an inherent sense of value being promoted through the potential for a new experience (Farr, 2017) or one that will not be available for long (Dyce and Fairweather, 2017).

4.1.2.2 Play Communities Within the Magic Circle

Creating a play community around the magic circle supports the first design theme by providing accessible entry points (i.e. as seen within NLC and ODLV, watching and spectating play can encourage others to participate) but also to invite the benefits of social play into the participative experience. Playing socially, whether through multiplayer experiences or through play and spectatorship creates a space of possibility (Spector, no date, cited in Jenkins and Squire, 2002), social bonds and a sense of belonging between players (Sicart, 2014; Brown and Vaughan, 2010; Flanagan, 2009; De Kort and Ijsselsteijn, 2008). Social play can also enhance the play situation, encouraging improvement in skill through coaching and mirroring techniques (Isbister, 2010), creating positive (or potentially negative) experiences through emotional contagion (Isbister, 2010; Ramanathan & McGill, 2008) and enhancement of emotional

experiences through the presence of an audience (Jansz and Martens, 2005). Social play brings many personal and emotional benefits to the players and spectators, enhancing enjoyment and increasing the potential for an imprint to be created (theme three).

It is also worth acknowledging that social play can increase pressure to perform on players and can negatively impact their experiences (De Kort and Ijsselsteijn, 2008). Therefore, the design of artefacts which wish to support social play and unlock the potential for individual and collective transformation it can offer, must consider the potential appropriation of the play situation by players or spectators and, whilst embracing the unpredictability of play, must try to create a safe magic circle around the game to mitigate such occurrences (design techniques across theme one and theme two can aid in developing an atmosphere of togetherness and positive social experience to address such issues).

4.1.2.3 Agency and Imprint

The invitation of agency allows participants or the play community to find meaning in the experience for themselves, either during or around the play situation. Many of the promoted design techniques nested within this theme relate to the design process of the artefact and the clues the artist or designer uses to invite participation and create possibility spaces. The provision of a broad space of possibility offers greater agency through interpretation but can also limit the depth of authorial communication possible (for example, it may be limited to general thematic communication as demonstrated within FFN). Limiting depth, can however, enhance the likelihood for personal connections to be made where the participants fill in the gaps left by the author by projecting themselves into the experience (Rohrer, no date, cited in Jagoda, 2011). A narrower space of possibility can still invite agency in interpretation, but allows more depth in communication, positioning the artefact as a conversation between the author and the participant, mediated by the artefact.

The creation of the imprint encourages consideration of the transformative potential inherent in play, based upon Huizinga's (1949) claim that being apart together in a play situation creates a permanent memory of the experience for participants. The facilitation of the magic circle and

play community in the second design theme improves the likelihood of an imprint. This imprint may be imbued with transformative qualities if the playful artefact provides a large enough possibility space to allow new behaviours and perspectives to emerge (Salen and Zimmerman, 2004), if it encourages experimentation with different lenses for interpretation (Gordon and Esbjörn-Hargens, 2007) or it provides spaces for "collective elaboration of meaning" (Bourriaud, 2002). The potential for an imprint thus relies on two factors; the possibility space as imbued in the artefact defined by the artist/designer; and the social potential in the spaces around the artefact to support collective meaning making, and reflection. Artistic intent, multi-player engagement and invitation of semi-spectatorship can enhance the potential for collective meaning making as can the positioning of the artefact in the play space (Dyce and Fairweather, 2017; Gramazio, 2017; Wiedemann, 2017).

4.1.2.1 Framework Limitations

The framework provides three overarching themes for consideration in the design of participation in a playful artefact which aims to foster temporary communities in a bounded play space and invite agency in transformation. Each theme is heavily interdependent, and thus the application of the framework happens simultaneously across all themes during the design, development, and situation of the artefact in a play space.

The framework does not fully consider the influence of the play space and the social dynamics which occur as design considerations (suggestions exist in 'design for spectatorship', and 'design for collective elaboration of meaning'), however, the following section "un-designable" factors in participation design will better summarise these issues. The participatory design framework for events also makes a number of suggestions about the use of space to promote participation, and therefore, if an artist or designer had control over both the artefact and the play context, these two frameworks could be combined to enhance to contextual positioning of participation in artefact design.

The framework, due to the nature of the foundation of practice-based research, draws heavily from abstraction, spaces of interpretation and physical play design as motivators for participant

agency. These design techniques are not an exhaustive list of design strategies and are motivated more so by the artistic preferences of the author. Further exploration of methods to encourage participation through embedded design is therefore required, perhaps through testing of this framework with a range of expert practitioners.

The data which informed this framework also presented a number of issues in terms of the validity of participant data. These mostly affected the generalisations which could be made by the data, however, this is not felt to be a limitation in the framework, as it has to be acknowledged that all artefacts will be viewed through the subjective lens of the individual and that generalisations, although helpful in underpinning overall design frameworks, will not lead to a guaranteed outcome. The framework also does not aim to achieve such outcomes, and rather embraces unpredictability in participation.

Lastly, in applying these design themes, the artist or designer thus needs to consider the level of agency they wish to encourage and the most appropriate ways to embed this within the artefact. The existing suggestions for artefact design open the space of possibility as wide as possible, whilst still maintaining an authorial motivation to create work. In this framework, however, the authorial intent is participation in social play and the potential benefits players can reap from this individually and collectively. This approach is not suited to all forms and themes of play and thus, the participation design framework should be approached by artists and designers with a clear vision of the level of agency they wish to permit and in turn, the level of co-creation of meaning, experience and outcome for participants they plan to support.

4.2 "Un-designable" Factors in Participation Design

The two frameworks for participation design highlight factors which can be influenced by the artist or context provider in their enhancement of participation in playful interventions. However, there are a number of factors presented by the play situation which cannot be designed. Firstly, audience diversity presents many issues including: the influence of preconceptions on their behaviours and attitudes (Sharp, 2015); their reason for participation and in turn, the level of participation they enact (Wenger, McDermott, Snyder, 2002; Wenger,

1998); and their personality and the potential interest in subverting the play experience (Sicart, 2014; Schechner, 1993). No participant is a blank canvas, and thus in inviting participation, the artist or context provider must recognise a wealth of variables which impact the individual and the social grouping as a whole.

One approach to managing this unpredictability is to 'design' the audience, through explicit communication of the experience, perhaps by leveraging existing models, using filtering techniques such as a safe space policy or the use of promotional language and imagery that creates an 'image' of the event (Gramazio, 2017; Pilia, 2017). However, designing audiences may not always be possible, depending upon the contextual factors of the playful intervention (i.e. it is positioned in an open community space) or it may not be appropriate to the goals of the intervention (i.e. diversifying the community around games development such as promoted by GAFE).

The space of participation will also shape associated participative qualities. The framework for participation in event design promotes techniques for addressing issues caused by space in terms of hospitality, atmosphere, accessibility etc. However, spaces also come with preconceived notions of accepted behaviour and value structures which shape preconceptions of participants and potentially affect their operation within the space. This, for example, was acknowledged widely by participants when locating ODLV in a formal focus group setting, rather than the festive and playful setting of a play party. It is very difficult to mitigate embedded social preconceptions about institutions and socially acceptable behaviour (as discussed in publication F), thus the influence of space cannot always be mitigated, but it can be reformed through play (Quack, 2017).

The social affordances of a participative space are also factors which cannot be designed or predicted. "Social contexts shape play by offering behavioral formats or directives" which "support and restrict our actions" (Hendricks, 2015, p.161). The research thus far has focussed mainly on the positive side effects and outcomes of play (with the exception of dark play and

appropriation), however, social play introduces interpersonal dynamics which greatly affect the play experience and confidence to participate at all. Playing with friends or like-minded individuals promotes "intimacy, immediacy, and common ground" and different kinds of relationships can influence "psychological processes such as expectancy-based facilitation or inhibition of performance and the relevance of favourable self-presentation." (De Kort and Ijsselsteijn, 2008). Thus, it can be said that playing with strangers can require more time for bonds to be formed, can limit social behaviour and promote strategies for enhanced "favourable self-presentation." Studies of spectatorship also showcase that the behaviour of audiences can have positive and negative implications for playful participation (Downs *et al.*, 2014; Kappen *et al.*, 2014) which is supported by the findings of analysis of ODLV. Social play can also lead to isolation and alienation if a player does not feel like their contribution is being recognised or can lead to conformity and a lack of personal fulfilment from the experience (De Koven, 2011). In playing together, recognition of play performance and contribution, either before or after play can enhance group identity and within co-operative physical play can promote a sense of togetherness (Goddard, Garner and Jensen, 2014). In facilitating bounded communities in play, such interpersonal dynamics are another unpredictable factor, upon which the potential for confidence, agency and potential transformation rest.

The promotion of trust, the magic circle and development of shared values can go some small way to mitigating external issues. Play in itself, through the other reality created by the magic circle should also imbue the experience with a levelling effect (Poulsen, 2017; Carse, 1986) where co-players are seen as teammates or adversaries rather than being judged for their external social qualities. If a blurring of these boundaries between play and real personas exists, it may negatively impact the play situation, but could also, for the participants, underline the transformative potential of the experience in that "Play makes people aware of their capacities for social agency." (Hendricks, 2015, p.163).

4.3 The impact of co-located social play

Measuring transformation and impact of community participation is difficult. In expert interviews, each practitioner found it difficult to verbalise, or present the impact of their work

in concrete terms. Some participants pointed to audience feedback questionnaire data, or anecdotal evidence, but for the most part, the interview data suggests that impact cannot be easily measured. Solnit (2016, p.xx) believes that "social, cultural and political change does not work in predictable ways or on predictable schedules" but believes that the uncertainty provides a "space of hope" (p.xxi).

The measurement of impact can also be complicated by the fact that participants often do not think to feedback on the affect an event has had upon them and instead may only share their stories with the context provider or artist much later on by coincidence or in passing (Dyce and Fairweather, 2017; Pilia, 2017). Lorenzo Pilia, (2017) thus, compares event facilitation to "planting seeds" in that the facilitator never knows which ones might grow.

There is no direct link between cause and effect in enacting change (Solnit, 2016) and thus the "return on investment" (Poulsen, 2018) approach to measuring impact generally, and especially in relation to participation in temporary communities where no consistent contact and "measurement" can take place lacks validity. One tiny adjustment or intervention can cause impact in inconceivable ways (Solnit, 2016) but the feelings of it may not be felt immediately, or may be cumulative (Farr, 2017; Solnit, 2016). Poulsen (2018) believes that although we should consider the returns of our actions at times, we should also recognise that:

> Play can have hugely important side effects, but we risk losing sight of play if all we care about are these side effects. If we only see play as meaningful when it has an externally defined "Purpose" or goal, we've already misunderstood the very nature of play.

The publications within this thesis claim that playing or participating socially in a bounded playful intervention (whether an event or artefact), is beneficial in itself, for all the affordances that play can bring, including the temporary formation of shared values and shared experience by a group of individuals. Play is valued for itself and for its ability to empower an individual or collective to make transformation for themselves, through the power of play, if they so wish.

With Solnit and Poulsen's remarks in mind, the impact of play is presented tentatively within this thesis. It is recognised not in relation to an authorial or directorial act in trying to evoke change, but instead, in relation to how the influence of participation in playful interventions can lead to participant-led transformation. It is, suggested from the findings of this research that transformation can be enacted on an individual level, on a community level and on a societal level.

4.3.1 Transformation on an Individual Level

For the individual, participating in a play community can lead to the formation of new perspectives around an issue. For example, within the NLC (Publication H) many of the participants recognised that participating in that event shed new light on ceilidh like experiences for them, and that interacting with people they knew and forming links with people they did not created an emotional contagion across the event, making the event not only memorable, but shifting their perspectives on the relevance of the tradition more generally. Similarly, ODLV (publication G) uses play and participation to playfully reform social conventions, making it acceptable for people to physically touch even though they might not know one another. This level of intimacy was raised by many focus group participants to be unusual, but that the framing of the game as a social object for the play community repositions physical contact and makes it a comfortable, accepted and an assumed convention of play in this context. The expanded magic circle of ODLV makes this behaviour acceptable whilst within the experience only, whereas the NLC participants transformation of perspectives extended beyond the event itself.

The potential for a shift in perspective is evident also in the work of expert practitioners who work with play. Poulsen (2017), of Counterplay, for example, raises that first time participants in the festival often arrive with concerns regarding what to expect or how to participate, but they often report, upon leaving the event on day three that they have found a sense of belonging and that the community built around the event provides a legitimate space for the use of play and participation to engage with issues, society and culture more broadly. Knowing

that they are not alone, but instead, are part of an international play community legitimises their activity and enhances their practice when returning to their own communities. This promotes their confidence to be playful in their approaches to everyday life beyond the festival itself.

Participation in playful communities can lead to transformation of the perspectives and confidence of individuals, it can reframe their experiences of an event, place or context and can reshape their relationships with others. On an individual level, playful participation can also have other benefits. Like participation in many social contexts, participation in a community can lead to the formation of new relationships. Playful participation, however, it is believed, can create deeper connections and more immediate links between individuals.

Across the literature and expert interviews, it is clear that play exposes elements of the self that individuals might usually hide. When a player's mind is occupied in a participatory play situation, they are distracted just enough to accidentally "transmit" subtle nonverbal clues about themselves (Hayward, 2017). These clues may reveal aspects of player personalities, (i.e. preferences, previous experiences, opinions) if playing a game as themselves, or if playing in a role, the play style, choices and performance may offer deeper insight into how the player's strategic thinking, values or interpretations of the world (as performed through their actions). Play provides a safe space for players to reveal aspects of themselves through discussion, negotiation and playful participation. These aspects may point towards potential commonalities or shared interests from which bonds may be formed which can extend beyond the play situation (Thompson, 2017).

Play also creates a heightened space of emotions: it creates situations where players may find themselves competing, negotiating or participating in life or death situations with people they have just met (Gramazio, 2017). In this way, players can again gain insight into the personalities of co-players and can become invested in a shared emotional situation which could leave an imprint upon them when the play is complete. For example, NLC, due to its transitional timing

for some participants, created an emotional shared situation, perhaps influencing the positive recollections expressed by 88% of the participants almost a year after the event.

Play creates spaces which facilitate potential relationships from which, personal benefits can be drawn (i.e. well-being, support networks, sense of belonging and purpose etc.). It can also lead to professional benefits. Within the Development Cultures project, for example, playful participation led to new collaborative relationships. These participants continued to collaborate at further events and went on to develop their professional practice together, beyond the project, due to participation in Development Cultures. Similarly, the directors of GAFE, Feral Vector, A MAZE. and Talk & Play each recognise that people have made connections at their events that have led to friendships, professional development and new career opportunities. Development Cultures similarly led to professional benefits, with one team going on to show their game at Eurogamer (Eurogamer, 2014) and another using their prototype as a proof of concept to secure funding for full title development (Figure 13) (Jamit Games, no date).

Figure 12: A screenshot of Jump Stars (Jamit Games, no date) which began life as a prototype within the Development Cultures project (Jamit Games, no date).

The extended longitudinal element of events, however, is perhaps key to the expansion of professional relationships and opportunities. Many of the projects explored within the research papers were single occurrences or events which created bounded play communities. However, many of the professional relationships or potential new opportunities identified within the research emerged from events which lasted longer than one day or were from events that recur. Events such as GAFE, Feral Vector, Talk & Play and A MAZE. / Berlin occur yearly, or several times within one year, therefore, members of the community can potentially meet up over several occurrences, strengthening their relationships and potential to collaborate professionally. Communities of practice rely upon sustained interaction over a longer period of time (Wenger, 1998), and it seems, similarly, communities of play are limited in their ability to achieve transformation beyond the individual without sustained and ongoing participation.

4.3.2 Transformation at a community level

It is possible for transformation to occur at a community level through playful participation in events and artefacts. Play helps to showcase shared interests and commonalities, from which a community may seek to undertake forms of collective action. For example, the community around the Counterplay festival recognised a shared interest in disseminating their experiences of play with people beyond those in attendance at the event through playful participation. A project to create, edit and publish a book emerged from the community: the book, The Power of Play: Voices from the Play Community (Poulsen *et al.*, 2017), was compiled in the year between one festival and the next and was given out to all attendees the following year.

Shared hardship can also motivate collective action: The Magpie Collection was a community motivated crowdfunding campaign for attendees to the A MAZE. / Berlin festival who had €17,000 of equipment stolen during the event. Those who were affected, alongside sympathetic artists, game makers and journalists came together to create a package of works to raise funds to replace the equipment through a crowdfunding campaign (Pugh, no date). From this unfortunate occurrence, the festival community came together to create a solution through collaborative creativity.

The community transformation displayed by both Counterplay and A MAZE. / Berlin emerged from shared needs identified and driven by the community. In designed and facilitated communities, transformation can also occur. Playbox is a facilitated community play initiative, driven by Emma Bearman who been working in her local area to build confidence within the community so that the responsibility for facilitation of Playbox can become collective, owned by the community, rather than relying solely on her facilitation. Through sustained interaction over a three-year period and a slow process of Bearman stepping back from facilitation little by little, Playbox is soon to transition to a collective community run initiative (Bearman, 2017). This transition clearly showcases that community transformation can occur by building confidence, agency and investment through participation, but also suggests that enacting transformation of a community that is motivated by a force from outside the community (i.e. that is facilitated) can take more groundwork, preparation and development than collective action which is motivated from within.

Sebastian Quack (2017) believes that agency is key to transforming a community and that groups which are motivated by their own identification of a shared interest and which exist more fluidly than the co-located contexts considered in this research, allows for momentum to be built and maintained. Self-elected participation driven by passion, interest and enthusiasm provide energy which sustains participation (Wenger, McDermott and Snyder, 2002) from which a community can grow and flourish. Quack (2017) suggests that communities that create themselves, rather than being facilitated, have embedded scaffolding to support the evolution and growth of the community. The key difference between self-initiated and designed community formation is that participant agency is embedded from the start in a self-initiated community and does not need to be facilitated, developed or grown (such as with Playbox).

Within the publications, issues with community agency are clear: at the end of Performance and Play (publication E), the participants created a significant list of plans that they wanted to develop together beyond the bounded limitations of the event. Unfortunately, the nature of the working practices, individual commitments, and a lack of infrastructural support limited

follow-through and the potential for collaborative practice and culture change as a community was lost. As suggested the experiences of Quack and Bearman, scaffolding is required to help to support continued practice at a community level beyond the limitations of a bounded event.

In event facilitation, as recognised in the final participative design framework, plans for future activity must allowed to emerge from the community, as driven by their shared interests and needs. This taps into participant agency which will motivate momentum of collective action beyond an event (figure 13). It may also be the case that in facilitated communities, transformation requires further scaffolding beyond the event itself, perhaps through lowering barriers to continued participation (for example through the provision of small pots of funding, residency schemes or access to materials and space).

Figure 13: Two Participants leading an impromptu sword fight during the Counterplay Festival 2017 (Counterplay, no date).

Collective action, the coming together of individuals as a community to enact change, either within the community (i.e. The Magpie Collection) or beyond the community (i.e. Counterplay) is the result of participation in playful experiences. It needs to be motivated by shared interests (which play can help to expose) or through a shared concern and, to maintain momentum, needs an internal motivator or infrastructure in order to reach fruition. Bounded facilitated social play events lack such infrastructure and therefore, their potential to enact change at a community level seems to be limited.

Artefacts can also evoke change at a community level to some extent. The artefact as a social object can be an instigator of discussion, shared meaning making and interaction in a social setting. The resulting interaction may motivate groupings to take action based upon their reactions to and experiences of the artefact. The research publications do not provide examples of change at a community level driven by artefacts, due in part, to contextual factors (liminal properties of the community in Publication H), the recentness of production of the work (Publication G) or limited user testing (Publication B). Artefacts do, however, have the potential to drive community level collective action. For example, the community of players of Star Wars Battlefront (Electronic Arts, 2015) came together online to collectively challenge a new model of commerce within Star Wars Battlefront 2 (Electronic Arts, 2017a) which was deemed to exploit the community allowing a "pay to win" model through in-app purchases. This model was removed from the game on the day it launched worldwide driven by these community protests (Electronic Arts, 2017b). Here, collective action through protest led to change in a system. Play presents the potential for collective transformation and action when it supports a community.

4.3.3 Transformation at a Societal Level

Society can also benefit from participation in playful experiences due to their potential to enact cultural change. Small examples of cultural change can be seen in the community level protests and collective action described in the previous section. It is also proposed that transformation at a societal level to a larger scale can be achieved through challenging of conventions, policies and behaviours through community participation and collective action. Within the publications

which make up this thesis there are no examples of societal level transformation, however, as previously acknowledged, measuring impact and change at societal level is complex (Solnit, 2016).

There are areas of practice, however, within this research which showcase the beginnings of and potential for large scale societal change. A MAZE. for example, is developing from an event, into a worldwide "movement" (Wiedemann, 2017). A MAZE. began in Berlin and helped to develop a flourishing community around the creative industries, digital media and play. A similar phenomenon can be seen with A MAZE. / Johannesburg as prior to the event, Johannesburg did not have an existing (or potential) game development community. After six years of the festival, a thriving community has been developed through the creation of discussion spaces, exposure of innovative practices and facilitation of playful exchange (Wiedemann, 2017). A MAZE has led to cultural transformation of the creative industries landscape in Johannesburg; A regular series of events, jams and meet-ups for interactive media development driven by the community now exists independent to A MAZE.

Social play events such as GAFE are similarly seeking to enact social change by redefining audiences' relationships to games and interactive media. These events (along with many other social play games events) promote games as an art form in accessible modes for "mainstream audiences." GAFE, for example, has developed a series of participatory techniques (including utilising ecologies of participation to suit different participative needs, use of legitimising social contexts and even in its name) which aim to create an invitation for anyone and everyone to enjoy and participate in and embrace video games (figure 14). Their programming also embeds diversity in content selection and promotion in order to increase the possibility that those who attend the event might experience a game which "speaks to them" transforming their relationships and perceptions of the form (Dyce and Fairweather, 2017).

Figure 14: Participants and spectators enjoying play in a social space at Games are For Everyone in Edinburgh April 2017 (We Throw Switches, 2017).

Festival programming can also offer the potential for cultural transformation, again through expanding the horizons of the people who attend. Pilia (2017) suggests that event facilitators have a social responsibility in programming talks as their selection of speakers will promote them as role models for the community. This social responsibility is also an opportunity to encourage expansion of horizons and transformation through programming, by providing visibility to speakers who may come from underrepresented groups (i.e. race, gender, age etc.) or who work in with underrepresented forms (i.e. genres, topics, technology). Such a programme of talks can open discourse around issues within the industry and can begin to take steps towards such programming approaches becoming standard practice across the landscape of events in the field. It can also, within the event, lead to the community embracing such practices, approaches and cultural values of inclusivity.

In order to unlock the potential for cultural change, participation in these events is key. By attending an event such as GAFE, Talk and Play, or A MAZE., participants have the potential to engage with and be part of cultural change. The very act of attendance, however, means that people already have an identified interest, or the can see the potential transformative qualities of participation (Poulsen, 2017). In order to achieve cultural change beyond a particular event or city however, wider participation is required. Poulsen (2017) promotes the creation of different types of invitations to attract different audiences, and it may be the case, that to enact cultural change through participation more widely, new models for participation are needed to engage the diverse needs of communities across society rather than trying to mould one event to suit all needs.

The potential for artefacts to enact cultural change is more difficult to ascertain from the findings of this research. Events are able to cater to high attendee numbers and support participation in social exchange and community. Artefacts are typically more limited in the size of community which can exist around them at any one time, and thus, the potential for broader cultural change would require an infrastructure that enhances artefact accessibility, whether through touring venues across the globe, using curation strategies to allow many people to participate at once or creating artefacts which are not limited by real space (i.e. fully digital artefacts). Each of these strategies, however, creates bounded communities around each specific instance of the artefact and to widen the magic circle further, requires scaffolding to connect these communities, enhance discourse and lead to transformation. There is evidence of artefacts which have the potential to enact cultural change in serious games, political art and performance, however, the conclusions of this research project has limited findings in relation to this issue.

Although many of the examples discussed relate to the transformation of cultural values in relation to video games, these uses of ludic participation are not specific to video games play and development. It is proposed that participation in playful interventions can be applied to

any issue, so long as the design is playful and is delivered in a way which aims to support and empower participants.

4.5 Chapter Summary

Within this chapter the results of publication analysis were synthesised and presented as two participative design frameworks. One framework focussed upon the design of playful events and the other on the design of playful artefacts. The frameworks can be utilised independently or together to enhance consideration of participation within the design process.

Design for participation invites a number of variables which cannot be mitigated, but only considered by the process. These “un-designable” factors were explored in relation to the design approaches promoted by the participative frameworks. Lastly, the impact of playful participation was evaluated, drawing from the findings of the research publications and experiences of expert interviewees. The impact can be seen on an individual, community and societal level, however the limitations of measuring impact, especially within bounded communities was also acknowledged.

Chapter 5: Conclusion

Playfulness and participation in play helps to bring people to a sense of shared meaning. In this way, players form a unique culture around play, using accepted (and agreed) behaviours and interactions to further game playing activity. The meaning agreed within a play scenario can be used to re-interpret the world, (i.e. players might form new connections with a space within which they play, they might explore new ways of interacting with each other or they might redesign ideas for how we live and work through play). These re-interpretations may exist only temporarily, within play, or can exist as a complete transformation beyond play, creating new mind-sets, perspectives and relationships.

This thesis aimed to formalise the key design principles that can promote participation in playful interventions in order to build temporary communities that maximise ludic potentials for exploring new perspectives and behaviours. It addressed this goal by organising playful interventions into two categories, events and artefacts, and through evaluation of a body of sustained research embedded within eight publications, sought to formalise design principles for consideration when designing participation.

The resulting frameworks for participation in playful events and playful artefacts promote that participation can be designed. The frameworks are seen to be reliable and robust due to drawing from peer-reviewed publications, their evaluation against criteria underpinned by an informed evaluative framework and their consideration of transferability beyond the specific contexts within which they were initially applied.

The two frameworks, although focussing upon different vehicles for participation, share many of the same qualities; promoting trust, managing disruption and supporting agency. Trust is central to building connections between participants and developing a temporary play community, which can lower social barriers and aid participation. Disruption is central to unlocking the potential for play to evoke perspectival or behavioural changes where participants, through play, can recognise needs, deficiencies or commonalities that they have.

Agency is important in empowering participants, individually or collectively, to embed these experiences into their everyday practices as a form of transformation and, potentially causing them to act in a form of individual or collective action which spills out from the ludic experience. It is believed that these overarching themes can be applied to any participative occurrence to develop and empower a social grouping.

The design frameworks also highlight the variables that a designer must consider, not only in terms of their design process, but also the social dynamics which exist in participatory practices of social groupings. Play provides tools to address such variables, such as social contracts, the magic circle and the creation of other realities, and thus is an ideal tool to promote participation. Play, however, is unpredictable and cannot easily be used by an artist, context provider or designer who has a specific authorial goal (or funding requirement) in mind. Instead, they must apply a spirit of playfulness, which is secondary to the main design aim, but embraces the inherent social and participatory elements of play whilst mitigating its unpredictability.

This thesis promotes designing to embrace unpredictability and in fact, using this quality of play as a tool to empower participants to make experiences for themselves, to take ownership and potentially to transform their behaviours and perspectives either as individuals or collectively in a play community. In relinquishing authorial control and embracing unpredictability, play can be appreciated by the designer and the participants for its own sake, as an enjoyable and aesthetically pleasing experience (Huizinga, 1949).

Play creates another reality which, through participation, can draw attention to constraints, deficiencies or needs players have outside the play situation (Bearman, 2017; Quack, 2017; Gordon and Esbjörn-Hargens, 2007). This quality imbues play with transformative potential, where an individual or collective responds to a ‘call to action’ driven by these constraints, deficiencies or needs. Playful interventions can support this shift in perspective through designing invitations to participate which are accessible, appealing and suit the needs of the

participants. The designer must draw from their participants in order to create a sense of community, form social bonds and support the community in taking agency for transformation. This can happen in a two-hour workshop, week-long festival or six-month project. The bounded nature of the experience only limits the depth not the potential for transformation.

The impact of a playful intervention may not be immediately or ever completely measurable in a bounded play situation, due to the temporary nature of the situation, and the tendency of impact to be something which occurs over a longer period of time. The context provider or artist, therefore, rather than delivering and measuring a playful intervention for immediate cause and effect should recognise their cumulative possibility for an individual, community and society. That, as Farr (2017) states:

> it's a sort of sense of belief that, those moments add up to make other things. I feel like it's a chunk or a node, or other things, that people may do, positively, hopefully in their lives.

Temporary community playful participation around an artefact, in this research, does not clearly lead to large scale transformation of a culture, but it can contribute to the transformation of perspectives of the individual or a community. It can enrich their experiences, create new perspectives on ways of being in the world and interacting with the world and can offer possibilities. It can also be fun. The potential for transformation is seen to be a cumulative one, with an individual challenging and developing their own perspectives, behaviours and ways of being in the world through participation in a series of potentially transformative experience over their lifetime. No one playful intervention can claim to make change in an individual or community, unless the individual and community deems it to be so. Where larger scale transformation may occur, is the cumulative effect of participation in a series of temporary play communities and the steps towards transformation that they provide.

Unbounded playful interventions however, demonstrate, even with their limited study within this research, a greater potential to enact transformation and collective action at an individual and community level and potentially at a societal level. The nature of ongoing participation in a playful community means continued exchange, interaction, collaboration and negotiation. The community will develop in experience, knowledge and ability and so too will its members through sustained participation (Wenger, 1998).

Facilitation can limit the agency of a temporary community as they are accustomed to having participation designed for them. Therefore, to encourage action from the community means handing responsibility for facilitation over to the community. From their limited study within this research, self-formed communities are deemed to have more intrinsic motivation *to* participate and also have agency from their initiation, and thus, seem to maintain energy and action beyond that of a community which is transitioning from facilitated to self-motivated. This aspect of community facilitation, agency and development requires further research in order to draw more robust conclusions.

Play demonstrates that meaning is a socially held concept and if enough people within a community agree a particular meaning is true, then for that community, it becomes true - within and possibly outside play. For example, as a society in Britain we agree that daylight savings time and British summer time exist, and in turn, we all agree to modify our clocks forward one hour in spring, and back one hour in autumn. We all agree that the meaning of time has changed and adjust our clocks, schedules and lives accordingly twice a year. Shared meaning can, as this example shows, enact large scale social behaviours and play and playfulness are tools which can bring people together to explore their sense of shared meaning. They are proposed as tools that anyone can choose to apply to any scenario they see fit - just as society's tools and technologies shape it (Turkle, 2011), individuals, whether artists, designers, context providers or anyone, too can collectively shape the socially constructed meaning of the world (and thus society) individually, at a community level and at society level through play.

5.1 Future Work

The frameworks of participation design are informed by practice but currently exist as theoretical models. In order to enhance the reliability of these frameworks, testing in a range of contexts, by a range of expert practitioners is suggested. The frameworks draw, in places from the design preferences of the researcher and thus testing with more diverse designers would help to ascertain if these are limiting qualities and if so, potentially lead to the enhancement of the design techniques and in turn the transferability of the frameworks.

The frameworks present a rather utopian view of the potential of play as an emancipatory act, and further exploration of the implications of the subversion of play, appropriation (for positive and negative motivations) and dark play would help to provide further insight into 'un-designable' factors of participation and design for unpredictability.

The research also presents a number of unexplored and underexplored avenues in relation to participation design and community formation. Firstly, there was limited success within this research in handing agency over to a bounded play community which had its interactions designed and facilitated. Further exploration of strategies to develop agency and ownership in a facilitated community may unlock the potential for communities to self-motivate and lead to collective action and potential transformation beyond the bounded play situation.

The artefacts presented for evaluation within the publications present limited potential for transformative impact beyond the individual participant. Further study of expert practitioners who create artefacts (in this study, the focus on expert practitioners related mostly to participative events) and further practice-based research which reaches larger audiences across a greater number of locations is required in order to better draw conclusions on the potential for artefacts to achieve such change. Such expert insight and practical findings will underpin and enhance the transferability and robustness of the participatory design techniques promoted within the playful artefact participation design framework.

The focus upon transformation and enacting change also suggests that these frameworks could have potential applications in political art and activism. This area was explored to a limited extent within the research, however, further consideration of the approaches, concepts and potential application of these frameworks within this realm may mutually benefit this research and the practices of artists within that field.

Appendices

Appendix A. Peer-reviewed Publications

In the following appendix each of the eight peer-reviewed publications which underpin this thesis are presented, alongside co-author statements of contribution (as necessary).

COGITATIO

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Article

Do We Need Permission to Play in Public? The Design of Participation for Social Play Video Games at Play Parties and 'Alternative' Games Festivals

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Abstract

Play is a fundamental to being Human. It helps to make sense of the self, to learn, to be creative and to relax. The advent of video games challenged traditional notions of play, introducing a single player experience to what had primarily been a communal social activity. As technology has developed, communal play has found both online and real-world spaces within video games. Online streaming, multiplayer games and built-in spectator modes within games underpin online communal play experiences, whilst 'alternative' games festivals, play parties and electronic sports, provide real world spaces for people to meet, play and exchange knowledge relating to both playing and making video games. This article reports the study of social play events which bring people together in the same space to explore video games making and playing. Expert interviews with curators, and event facilitators provides qualitative data from which design processes are formalised into a 'model of participation' of social play. Four key areas of balance are proposed as core considerations in supporting participation in event design. The study of these events also suggests that their design and fostering of participation has the potential to evoke cultural change in game making and playing practices.

Keywords
cultural intermediaries; cultural transformation; games; independent video games; social play events

Issue
This article is part of the issue "Games Matter? Current Theories and Studies on Digital Games", edited by Julia Kneer and Ruud Jacobs (Erasmus University Rotterdam, The Netherlands).

1. Introduction

Attending a social play games event, such as an "alternative" games festival like A MAZE./Berlin or Feral Vector or an evening "play party" such as Games are for Everyone or Wild Rumpus can provide new gaming experiences for the attendee. Such experiences may be in the form of engagement in socially mediated narratives co-constructed by spectators and past players which sit on-top of gameplay, (Isbister, 2016), exposure to new types of games and game making practices or finding a sense of togetherness amongst a group of strangers through playing socially (Goddard, Garner, & Jensen, 2016). Play parties and alternative games festivals seamlessly mix play with knowledge exchange, networking and socialising, providing attendees with a range of invitations to participate. Through participation in game making and playing, these events and their co-ordinators, as acknowledged within an interview with Lorenzo Pilia of Talk & Play and A MAZE. Berlin seek to engage not only with existing games communities but are also often interested in engaging with and promoting games making and playing practices to new communities. Thorsten S. Wiedemann of A MAZE raises (within this research) that the programming of these events and the games they choose to showcase often differs in content, form or modes of interaction in comparison to events and games developed within commercial games making practices (Goddard & Muscat, 2016), being more expressive and often more aligned to art practice in their form.

This research seeks to study the design of events which promote video games playing and development in co-located contexts and to identify the ways in which the event facilitators design for participation. These events rely upon attendance and participation to exist (culturally and financially) and thus, participation is positioned in this research as central to creating, maintaining and propagating social play events. Drawing from interviews with event facilitators and secondary research material publicly available about their work, these events will be studied in order to determine the needs of the communities who attend

the events from the perspective of the event facilitator. The community needs will be used to inform the design and proposal of a model of participation in social play event design and to reflect upon the impact of these events on both the individual and on games making and playing culture.

The world of alternative games festivals and social play has had limited academic attention, despite the growing number of events which exist world-wide. The studies of play and games festivals which do exist aim to map the landscape of festivals in this field (Wood, 2016) and to study specific festival cases (Gavin, Kenobi, & Connor, 2014; Parker, Whitson, & Simon, 2017a). This study aims to contribute to this body of knowledge, focussing upon formalising design approaches, exposing practice and disseminating the knowledge drawn from a panel of experts whilst also considering the impact of these events upon society. The design of event and community participation has received significant academic attention within the fields of learning (Wenger, 1998; Wenger-Trayner, Fenton-O'Creevy, Hutchinson, Kubiak, & Wenger-Trayner, 2015), business (Wenger, McDermott, & Snyder, 2002), the arts (Simon, 2010; White & Parker, in press) and creative industries (Brandt, 2006; Parker & Galloway, 2017). Drawing from this landscape of theory around participation, the emerging model of practice identified within social play event design through this research can be evaluated, contextualised and better understood in terms of its impact upon individual and social participation.

This research focusses upon social play events which include alternative games festivals, play parties, and meet-ups. Electronic Sports, (eSports), events also make a significant contribution to social play design, however, these have been studied more extensively academically (see Hilvoorde & Pot, 2016; Seo & Jung, 2014) and sit beyond the scope of this research.

1.1. Social Game Playing Communities

The social play of video games exists in many forms, the most well-known of which targets the game making community, particularly established games companies, publishers and games related industries who share an interest in commercial games development. These large-scale events, (e.g. Game Developers Conference, or EGX), typically use traditional conference style approaches, mixing programmed talks, networking, and play sessions of video games in an exposition format. Commercial conferences tend to utilise a *one-size-fits-all* approach for the exposition of video games, providing a standard space for each exhibitor. In order to enhance their appeal to the commercial games making community, and as Holly Gramazio, of Now Play This acknowledges within an interview, these conferences attempt to design spaces conducive to playing games and learning about games practices primarily for promotional purposes.

Independent games developers (indie developers), those who create games which typically sit outside of traditional commercial models in their content and production, are catered to by industrial conferences to some extent (Wood, 2016), however, in the last ten years, a range of alternative games festival have emerged, which focus upon diversity, creativity and experimental approaches to game development, promotion and publication. These festivals, like commercial conferences, make use of structured programming over a number of days, however, for Wiedemann, the spirit differs greatly, aiming to be more celebratory of game making and playing. The exhibition element tends to align more closely to artistic exhibition, fitting the presentation method to the work being shown. Alternative festivals also include practical workshops, inviting participation in the making of games in accessible sessions unlike those found at other games events.

There are also events which cater to more diverse audiences. Play Parties and meetup events invite participation from the general public, game developers (commercial and indie), games enthusiasts, academics and students. Alternative and commercial games festivals may cater to a range of these groups, however, often this is not to the same extent as found within meetup events. The play party or meetup tends to run for a few hours in one evening, happening multiple times in a year, focussing on community development or promotion of games as a form. The format varies from exhibiting games in a social setting to mixing exhibition with informal talks. The events also vary in presentation style from makeshift approaches which cobble together tables to facilitate games showcase through to polished curated exhibitions which use environmental design, reinterpretation of media and installation.

2. Analysing the Landscape: The Interviewees

To inform this research, six event facilitators were interviewed in semi-structured interviews lasting between one and two hours in length. The facilitators were selected for interview due to their experience of designing events which promote social play and game making practices. The events studied vary from well-established to those in their first year to provide insight into the range of challenges events can face at different stages in their development. Table 1 outlines each event studied within this research.

The interviews focussed upon four key themes: the event and practice of the event producer, exploration of the role of play within festival design, considerations of community in festival design and reflections upon the impact of festival practice upon the audience, culture and society. The data gathered from interviews and secondary sources underwent thematic analysis utilising the six-step process (Braun & Clarke, 2006). Thematic codes were drawn inductively from the interviewee responses in order to ensure that design concepts came from the data rather than being shaped by researcher perspectives (Saldaña, 2015). Data sets were compared per theme and were used to inform the design of the relationships presented within the model of participation which forms the core findings of this research (Braun & Clarke, 2006).

Table 1. Overview of the events studied within this research including interviewee names, event descriptions, activity types, and attendee numbers.

Event and interviewee	Event Description	Event Classification and Activities
A MAZE./Berlin 2008 - present Thorsten S. Wiedemann and Lorenzo Pilia	Four day "International Games and Playful Media Festival" (A MAZE. GmbH, 2017) occurs annually.	Festival Curated and open exhibition, workshops (making & playing), curated talks, social spaces, parties, awards.
Arcadia 2017–present Malath Abbas	One day "celebration of independent games" (Arcadia, 2017) occurs annually.	Festival Curated exhibition, workshops (making & playing), curated talks, social spaces, parties.
Feral Vector 2012–present David Hayward	Three day "festival about making games and gamelike things". (YMPT Ltd, 2017) occurs annually.	Festival Exhibition, workshops (making & playing), curated talks, social spaces.
Games are for Everyone (GAFE) 2015–present Andrew Dyce and Craig Fairweather	"A night of fantastic, raucous, beautiful games, mixed with drinks, music, and wonderful people" occurs 2-3 times per year (We Throw Switches, 2017)	Play Party Curated exhibition, social spaces, parties, commissioning new work.
Now Play This 2015–present Holly Gramazio	Three day "festival of experimental game design" (Now Play This, 2017) occurs annually.	Festival Curated Exhibition, workshops (making & playing), Curated talks, commissioning new work.
Talk & Play 2013–present Lorenzo Pilia	A bi-monthly event which "provides the opportunity to game enthusiasts, players and makers to meet and exchange knowledge in a friendly, relaxed and safe environment". (BerlinGameScene.com, 2018)	Meet-up Open exhibition, curated talks, audience shout-outs, social spaces.

3. Needs of Games Communities

The interviews demonstrate that within their design process, facilitators consider the specific needs of the diverse communities who attend their event. Each specific attendee grouping presents issues, in relation to their own needs, and also in relation to their interactions with the needs of other communities at the event. Facilitators use design approaches to mitigate issues specific to and across each grouping. In order to better understand the tensions within and across audience groupings, attendees can be broadly categorised as *games and professional* or *general* communities. These two groupings present competing interests which the facilitator must manage to support and promote participation in their event. Detailed overviews of the audience profiles for each event within the research is provided in Table 2.

Table 2. Overview of audiences for each event.

Event	Attendees (2017)	Games & Professional Communities	General Communities
A MAZE./Berlin	5,500 visitors	Game developers * Publishers Practitioners from other fields	Students Games enthusiasts General public

Arcadia	200 people	Game developers*	Students* Games enthusiasts General public
Feral Vector	200 people	Game developers* Practitioners from other fields	Students Games enthusiasts
Games are for Everyone	500 people	Game developers* Practitioners from other fields*	Students* Games enthusiasts* General public*
Now Play This	2,100 people	Game developers	Students Games enthusiasts General public*
Talk and Play	150–200 people	Game developers* Practitioners from other fields	Students Games enthusiasts* General public

Notes: *indicates the groupings which are the majority at each event.

Analysis of the interviews presented four key community needs that facilitators consider in facilitating participation: supporting attendee confidence, legitimising games as a social practice, providing spaces to support diverse interests, and managing competing interests. These key community needs were identified by facilitators across the data set and therefore are seen to be transferable considerations for participation design regardless of the specific event at hand. The considerations can be defined as follows:

- Catering to and supporting the confidence levels of attendees is a common consideration for facilitators, regardless of community. Confidence levels seem directly connected to the amount of knowledge or experience an individual has around an event and whether they are attending in a group or alone;

- Preconceptions and negative stigma around games is a significant issue for facilitators in relation to general community participation. Outside game making and playing circles, games are often still associated with negative connotations about their content, the people who play them and who make them. These connotations act as barriers to entry for expanding participation;

- Social play events present models of value in the work they select and promote to both professional and general games audiences. Such curation, however, can also be seen as gatekeeping, creating tensions within professional games communities in terms of their place within a curated 'image' of games development. The systems of value promoted by such events can enhance or limit participation by professional communities;

- Social play events tend to develop a 'core community' of regular attendees as they become more established. The core community differs across each event within this research, however, a distinct tension is apparent between the two different types of community identified: the professional and the general community. The needs and interests of these groups differ in complexity, accessibility, and participation levels. Accommodating such diverse needs to support participation presents significant programming challenge.

These four community needs provide valuable insight into the challenges faced by facilitators in event design. Further interrogation of interview data, using each of these community needs as analytical lenses provided a basis for the creation of a 'model of participation design' (Table 3). This model details the ways in which expert practitioners design their events in order to facilitate participation by their target audiences. The model of participation design proposes that social play event design for participation requires the balance of a series of competing interests of diverse communities.

Table 3. Model of participation design.

Comfort and Discomfort (*confidence* to expand perspectives)
Niche and Mainstream (*legitimacy* to expand audiences)
Curation and Gatekeeping (*diversity* in space provision for participation)

Insiders and Outsiders (*Scaffolding* to support community expansion)

Notes: The underpinning community needs are presented in italics.

The model is informed not only by the design techniques identified by the practitioners themselves during discussion, but also from consideration of specific examples of practice evident within the interview data set and within promotional material relating to each of the events within the study. Common themes in practice across the data set were identified and provided a basis for the formation of the model. Further analysis was then undertaken to identify outliers and issues specific to individual events in order to recognise the diversity of audiences not only within each event but also across all of the events which make up the data set. The final model for participation design thus presents common practices amongst practitioners whilst also acknowledging innovative approaches specific to individual events. These outliers are presented as examples of best practice that are designed specifically for the community needs of a particular event. Inclusion of best practice examples in the design of the model of participation embeds, within the model, the promotion that a one-size-fits-all approach cannot be used to enhance participation and instead that facilitators must design for and innovate for the needs of their community, working with their community to enhance participation.

The first set of competing interests identified within the model are *comfort and discomfort* which relate to building a space and facilitating events which allows confidence to grow within a diverse community. Confidence and comfort are integral to laying a foundation from which the facilitator can support and disrupt conventional practices to achieve transformation through experimentation and playfulness in participation. Secondly, the *niche and mainstream* consideration acknowledges the difficult positioning of games and play more broadly in western culture and identifies approaches utilised by facilitators to promote legitimacy around video games in social contexts to enhance participation and diversify audiences.

Curation and gatekeeping, the third set of competing interests, recognises the event facilitator as a cultural intermediary, promoting value through their selection (and thus filtering) of media for their events. Interview discussions reveal that no one event can address tensions presented by the *exclusive* nature of promotion of value and thus, that social play events rely upon the proliferation of partner events with different aims, values and interests in order to support community expansion and develop participation in videogame playing and making practices. The fourth and final set of competing interests, *insiders and outsiders*, reflects the specialist nature of the communities which gather around videogames and explores the ways in which newcomers to the events can be supported by the facilitators or, by the community, through designed scaffolding in the event, to transition into full members of the community. The following section discusses each of the four competing interests proposed within the model in depth, providing insight into the approaches used by facilitators (with specific examples) to maintain (or otherwise) a balance to foster participation.

3.1. Comfort and Discomfort

Central to fostering participation in an event is the creation of a space where people feel comfortable. Interviewees widely recognise that if people feel comfortable, they are more likely to participate. Pilia believes that considering the first impressions of an event, both in its promotional text and upon first entering the venue (including consideration of its atmosphere and facilities) are basic factors which can enhance attendee comfort levels inviting them to firstly attend and secondly to be open to the possibilities presented by the event. This view is also supported by Andrew Dyce and Craig Fairweather of Games are For Everyone and Gramazio. Play and playfulness are core design techniques used to build on first impressions and whether accessed by the attendee through active interaction with a game, talk or workshop or through being part of the audience, can help to unlock the potential of games as a form (Sharp, 2015). In attempting to make people comfortable at a social play event, it is integral that facilitators provide attendees with every opportunity to see potential in games and play *for themselves*. Facilitators, therefore, design different “ecologies of participation” (Fischer, 2011), a series of invitations which invite different levels of participation to suit the varying confidence levels of attendees. Gramazio, for example, provides print works for contemplation and creates spaces for spectatorship (Figure 1), whilst Wiedemann and Pilia aim to provide a programme with space for playful attendee improvisation and contribution. These are a few approaches which provide a *continuum of participation* within the programme of an event within which attendees can be active agents in selecting activities to suit their needs, comfort and confidence levels enhancing their potential for participation.

Figure 1. Many events design spaces which allow play and spectatorship to co-exist, supporting ecologies of participation. These include A MAZE./Berlin, left showcasing SIHEYU4N (We Are Müesli & Koning, 2015). Image copyright by Jens Keiner (2017, reprinted with permission). Right showcasing Now Play This. Image copyright by Ben Peter Catchpole (2017, reprinted with permission). Games Are for Everyone and A MAZE/Johannesburg.

Comfort and confidence fosters attendee participation at a level which suits their needs, whereas discomfort can act as a barrier to participation. In seeking to promote games as a cultural form, many of these events aim to redefine attendee preconceptions around games; such challenges to individual value systems can cause discomfort. Play, however, inherently contains transformative potential (Bogost, 2008) which can be fostered by event facilitators to aid shifts of perspective whilst disarming discomfort. Transformative play can have many effects for the player including shifting their thinking, behaviour, and social relationships with others (both players and non-players) (Salen & Zimmerman, 2004). Play or playfulness in event design, such as providing ecologies of participation and supporting attendee agency, affords the potential to transform attendee perspectives around game playing and making practice.

David Hayward acknowledges this potential for transformation suggesting that discomfort can achieve similar effects. He believes physically relocating to attend an event in another place (potential for discomfort) can free individuals from the social limitations faced everyday providing them with a space to experiment with aspects of personal identity, behaviour or ways of thinking. Such experimentation through participation can transform their thinking both within and beyond the event. Shusterman (2012, p. 29) promotes the social element of experimentation believing that "the aesthetic experience of collaborative creation, and even the cognitive gains from exploring new practices that provoke new sensations, spur new energies and attitudes, and thus probe one's current limits and perhaps transcend them to transform the self". The potential for individual transformation, therefore, can be driven not only by programming a continuum of participation but also by the approaches of the individual motivated by event affordances.

Games and play have inherent links to culture (Caillois, 1958/1961; Huizinga, 1944/1949), often providing either a reflection of culture or the potential for transformation of culture (Salen & Zimmerman, 2004). The framing of games, play and playfulness more broadly, in an event context is key to unlocking its transformative potential (Salen & Zimmerman, 2004). Events which seek to influence the culture of games playing and making practice, therefore, must consider programming to explore cultural concerns whilst also fostering participation through a balance of comfort and discomfort to create conditions to unlock the transformative potential embedded in play.

3.2. Niche and Mainstream

Social play events which promote games playing and making practices are niche in nature and tend to appeal to specific audiences. Videogames as a form, have a broadly negative reputation in *mainstream* culture, often attracting demonizing headlines in the media (i.e. Manager, 2015; The Telegraph, 2012). News outlets are a form of cultural intermediary, organisations which mediate between producers and consumers (Hesmondhalgh, 2006) providing frameworks for understanding cultural meaning (Venkatesh & Meamber, 2006) and legitimacy (Smith Maguire & Matthews, 2012). Negative notions of video games in mainstream media lead to a misunderstanding of video games as a form, promoting their negative qualities and negating their potential cultural and societal value. The stigma surrounding video games in mainstream media and their lack of recognised value in Western culture (Bogost, 2008) presents issues to the expansion of participation in social play events.

To disarm the stigma around video games, their creators and their players, event facilitators including Dyce and Fairweather use *accepted* social settings (such as a bar or club) to try to "normalise" video games for mainstream audiences. Social spaces are embraced by society for other forms of media (i.e. cinemas, libraries, theatres) therefore, templates exist for legitimate video games social space design. Using the legitimising qualities of such spaces, however, requires reconsideration of models of

presentation of games in a social context. Arcades provide a historical model for the presentation of games in a social context, a model adopted by the commercial games conferences *one-size-fits-all* approach to exposition. This model limits social potential, minimising space for spectatorship and providing difficulties in participating due to high attendee numbers. Games are naturally a form of social technology which provide a system to foster interactions through play (Flanagan, 2009) however, as seen with conferences, arcades, galleries and museums (White & Parker, in press) their social potential can be expanded or limited by event design.

Facilitators design to enhance social potential of games through careful curation of games with affordances to suit social settings (i.e. multiplayer or physical games) (Goddard & Muscat, 2016). Dyce and Fairweather, through simplification of control schemes and designed presentation of games aim to remove boundaries and enhance participative draw (Figure 2). Such re-interpretation of games can enhance their social potential and embed them legitimately within their social context. Wiedemann believes video games will always remain a niche interest, however, the promotion of their value, beyond that seen within mainstream media may enhance of participation and aid the redefinition of games culture.

Figure 2. Games are for Everyone uses arcade cabinets as artworks in their own right which also house experimental games, providing participative draw and supporting ecologies of participation for players, spectators and those who wish to 'view' the cabinets. Image copyright by We Throw Switches (2017, reprinted with permission).

3.3. Curation and Gatekeeping

Events which showcase games culture typically involve a selection process to determine work which is deemed *suitable* for the event. An open call for submissions to the programme (i.e. A MAZE. GmbH, 2017; Now Play This, 2017) or invitation to individuals to contribute to the event based upon the facilitator's knowledge of their work (as acknowledged by Pilia in organisation of games showcases at Talk & Play and Wiedemann in programming the A MAZE./Berlin exhibition space) typically provides a wealth of material, from which the facilitator (or an expert panel) can make selections to create the event programme.

Selection positions the facilitator as curator, associating value and legitimacy to the work they choose over that they reject (Balzer, 2014). The facilitator-curator is again a form of cultural intermediary, applying their expertise within their field to frame material as having value (Smith Maguire & Matthews, 2012). Parker et al. (2017a) position Indie Megabooth, a curated independent games showcase, as a cultural intermediary, recognising its role in promoting a cultural image of indie games propagating the "popular

discourse around 'indie-ness' in the game industry and gaming culture". They propose that Indie Megabooth along with other key cultural intermediaries act as "curator-gatekeeper" in the selection and promotion of indie games.

In designing for participation, whether for game makers or players, facilitators must consider the balance between curation and gatekeeping. These two very similar concepts of value promotion can be differentiated by considering the facilitator's motivation. Gramazio believes curation opens the opportunity for the event to build a narrative around a series of selected media and speakers (Dernie, 2006) whilst Dyce and Fairweather feel they can communicate messages which perhaps compete with those promoted in mainstream media. Gatekeeping on the other hand, particularly when it relates to the promotion of a particular image of a community (Parker et al., 2017a), can be seen as defining the general audiences' "social reality" (Shoemaker & Vos, 2009, p. 3) of that community. In turn, this can exclude and alienate portions of the game making community who are not deemed to *fit* the image or values being promoted, leading to divisions and friction (Parker et al., 2017a).

The balance of curation and gatekeeping lies perhaps in transparency and diversity. With gatekeeping, "issues and events that are not covered are absent from the world view of most audience members. People cannot know about what the media fail to tell them" (Shoemaker & Vos, 2009, p. 4). Cultural intermediaries shape audiences' experiences of game making and playing culture through their selection of material and narrative creation. The motivations for facilitating an event and a facilitators own sense of cultural value can shape their curatorial approaches (Balzer, 2014). The interviews revealed several motivations for event facilitation including developing games culture, building communities, redefining social play conventions, and inspiring talent. Transparency around the motivation of an event throughout its promotional material and its operation provides attendees with clarity helping to manage their expectations, potentially limiting friction. Additionally, the diverse motivations for event facilitation creates a landscape of unique events, each with a particular focus and approach to potentially suit different group interests (Figure 3). Taste is a socially formed concept which has an organising feature often grouping people together with shared interests (Smith Maguire, 2015) thus the greater the diversity of social play events that exist within the landscape, the more likely that the shared tastes of diverse communities will be catered to by at least one event, potentially avoiding alienation. Each social play event can be seen to co-exist in an ecosystem, supporting the participation and development of its own communities, whilst also expanding the ecology of participation across all social play events by providing unique opportunities which cater to diverse audiences.

Figure 3. Social play events create unique experiences around playing and making practices as evident with through: (a) the physical play of Carpe Diem (Lun, 2017) at Now Play This—Copyright by Ben Peter Catchpole (2017, reprinted with permission); (b) the consideration of speaker and topic diversity at Talk & Play—Copyright by Julian Dasgupta (2017, reprinted with permission); (c) and the informal social spaces provided by A MAZE./Berlin—Copyright by Jens Keiner (2017, reprinted with permission).

3.4. Insiders and Outsiders

Dyce and Fairweather, Pilia, and Wiedemann, acknowledge that social play events are interested in diversifying audiences to address issues of the niche and mainstream and to refresh the practice of the games making community through inviting, inspiring and developing new perspectives, talent and voices. The 'core community' of an event can be positioned as 'insiders' who have expertise, social bonds and previous knowledge of the event, forming a community of practice (a group of individuals who form shared values, beliefs and practices through shared interest of a subject; Wenger, 1998). This core community may seem closed to 'outsiders', newcomers to the event, perhaps through appearing as Hayward acknowledges in relation to his experience, an intimidating 'clique' (Wenger et al., 2002) or as identified by Pilia, through boundaries presented by specialist knowledge and expertise (Wenger-Trayner et al., 2015).

Balancing the needs and interests of professional and general communities in programme design can be difficult. Professional communities tend to be interested in opportunities to enhance their specialist skills, connect with peers, potential collaborators and publishers whereas general communities tend to be interested in finding access points into game making and playing practices. Pilia believes that it is not possible to suit the interests of everyone, and specialist communities may feel alienated or disenfranchised by general programming for a broader audience.

The social play event, in expanding participation, can be understood as bringing together several communities of practice (each with competing sets of shared experiences, interests and values), which sit across the interdisciplinary landscape of practice (Wenger, 1998). 'Competence' is a socially held quality, which helps individuals to operate within and across communities of practice (Wenger-Trayner & Wenger-Trayner, 2015, p. 13). Within the game making community, competence may be seen as, for example, familiarity with game engines, artistic techniques or design approaches. Should an individual seek to enter a new community of practice, their competences will either shift to "reflect the competence of the community" or will challenge and potentially transform the "regime of competence" of the community (Wenger-Trayner & Wenger-Trayner, 2015, p. 14). It is difficult for a general community member to develop specialist expertise upon their first interaction with the professional games community, however brief, initial interaction will allow familiarity to develop and may encourage individuals to continue their learning beyond the event, eventually developing competencies that allow them to become games practitioners. The professional community can benefit from the expertise of general community members as they can draw from their knowledge and experience of participation in other specialist communities of practice, which may indeed challenge and perhaps enhance the practice of the game making community (Wenger-Trayner & Wenger-Trayner, 2015).

It is not possible to design a community of practice (Wenger, 1998), therefore, the facilitator, whether starting a new event or building from an established community, can only design conditions within which a community may drive its own development (Parker & Galloway, 2017). Designing for participation is proposed as scaffolding that facilitators can provide to support transformational shifts and expansion of communities. Dyce and Fairweather, Hayward and Pilia all recognise that the exchange of knowledge, experiences and competencies can naturally emerge from the communities themselves given the creation of comfort, careful management of the niche and appropriate curation of an event.

The scaffolding provided to support transition from 'outsiders' to 'insiders' in a community by facilitators includes, for Pilia, programming accessible content, supporting knowledge exchange and for Malath Abbas, Pilia, and Wiedemann providing attendees with opportunities to present, participate and actively create the event themselves. Pilia also believes that the provision of online spaces for the community to continue engaging beyond each event is integral to participation and on-going involvement. Dyce and Fairweather believe that it is not possible to fully integrate into a community by attending an event only once; repeated attendance is needed to allow an individual to develop competencies to transition from "outsider" to "insider". This idea is also echoed by Pilia.

4. Analysing the Model: Facilitation Impact and Challenges

The model of participation provides an overview of community driven concerns for event facilitation. The model can be used by facilitators to evaluate their design approaches prior to or in the development of event facilitation. Each event, however, must balance the different factors in the model in an appropriate way for their specific community and event motivation as can be seen by the diverse approaches used by facilitators in this research.

The model and methods of design used by facilitators also provides insight into the impact and value of these events which cannot be measured in monetary terms but rather is recognised in the impact upon individual (local community) and also society (see Table 4).

Table 4. An overview of the impact of social play events locally and more widely as described by the model of participation.

Impact of social play events on individual and local community
• Building of confidence and new relationships with game playing and making practices through agency in participative levels • Inspiring, expanding and motivating communities through programming, agency and enhancing social potential • Providing spaces for experimentation, playfulness and potentially individual transformation
Impact of social play events on industry and society
• Designing spaces which enhance the potential for cultural transformation of game making and playing practice • Redefining the image of games socially and culturally to general and professional audiences • Defining ways of positioning games authentically in social contexts to enhance their legitimacy • Collaborative formation of culture through support, diversification and propagation of communities of practice

Facilitators face significant issues other than those presented within the model. Each event within this research relies upon an individual to occur which, for some, causes significant personal cost on stress levels, morale and financial sustainability. Similar connections between an event and an individual have been recognised in other studies of social play events (see Parker et al., 2017a). It seems that the individual, their reputation and networks are core to creating appeal, programme diversity, and

motivating the recurrence of events. In turn, the individual is able to shape the event programme through their own curatorial voice contributing to event diversification (niche and mainstream issues) whilst potentially aggravating issues around curation and gatekeeping (however, Wiedemann acknowledges the importance of working with a team to avoid unconscious bias or for Hayward, what could be seen as a 'personality cult').

The publisher and commercial games community are under-represented within this research, with few interviewees providing insight into the design for involvement of these audiences. The experimental games and practices showcased at these events exist out with *accepted* commercial frameworks making it difficult to explain their value to commercially focused entities. Throughout the interviews, explaining the positioning of games as valuable cultural artefacts was a constant issue. Half of interviewees have previously secured some public and/or commercial funding to support their events, however, overall, they rely upon in-kind support, volunteers, and ticket sale income. Social play events exist in flux from year to year, struggling for sustainability due to such issues with funding and promotion of value to potential stakeholders.

Social play events have the potential to lead cultural and social transformation around video game making and playing practice as demonstrated by the model of participation, however, many facilitators recognise that these new forms of cultural intermediation are lacking in models of practice which can aid the creation of sustainable models independent of the individual. Wiedemann suggest that institutionalisation of events into independent organisations run by a team or by a series of lead facilitators, each for a fixed term, is a possible solution to personal attachment, stress and cost of event facilitation. It may be, however, that as Smith, Maguire and Matthews (2012, p. 5) suggest, "the personal is necessarily professional" in cultural intermediation and that successful event delivery relies wholly upon the personal effort and motivation of these individuals, their reputation and networks. Creating supporting infrastructure and models for institutionalising these events may propagate their growth but may also negatively impact their legitimacy, appeal and programming.

5. Conclusion and Future Work

The facilitation of participation in social play events can be seen to rely upon the balance of four key factors: Comfort and discomfort; niche and mainstream; curation and gatekeeping; and insiders and outsiders. The model presented within this article seeks to formalise the design considerations for social play participative event facilitation, as informed by analysis of expert facilitators understanding of the needs of their communities. This model is theoretical, formed through discussion with expert practitioners and secondary source analysis. It aims to combine common sense considerations with design practices in order to facilitate participation, foster agency and potentially lead to transformation for attendees, and for game making and playing culture as whole. The model aims to summarise complex considerations of events which cater to a range of audiences across diverse environmental contexts. It does not provide a one-size-fits-all model for the design of participation and if applied, needs to be tailored to each new event. It is also important to acknowledge that the model is not exhaustive and could benefit from expansion of the data to consider the design processes of further social play events and practical application as a design approach in order to fully test its robustness.

Social play events are emerging forms of cultural and social practice which exist within an ecosystem and their facilitators could benefit from opportunities to share their experiences and insights with one another more formally than at present, in order to help explore sustainability and the development of potential models of infrastructure to support event delivery. Academia could play a significant role in facilitating, formalising and revealing these practices, and indeed, Concordia University has taken the lead in such knowledge sharing, hosting an "Indie Interfaces Symposium" in 2017 (Parker et al., 2017b).

The facilitation of co-located social play can clearly make significant contributions to individual attendees, games communities and to society beyond games playing and making cultures. These cultural intermediaries are at the forefront of a new movement in social-technological-artistic practice and, driven by their interests in invoking transformation and promoting the form, are leading the way to new ways of making, playing and living with video games.

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Abstraction in Experimental Animation and Computer Games

Abstract. There are many similarities between the fields of experimental animation and experimental computer games. For example, conceptually, many examples are subjective representations of the artists' experiences or point of view; structurally, experimental works avoid the conventions of their medium, seeking to express and communicate in innovative ways; and stylistically, many make use of abstract visual form as representative devices. It is not possible for an audience to passively engage with such experimental works in the same way as their more conventional counterparts due to the unconventional nature of the media. Instead the work must be 'read' by the audience or player so that they can interpret the meaning behind the work.

The author seeks to explore the concept of interpretation through discussion of examples of experimental animation and computer games. Within this discussion design principles which impact upon interpretation of an art work are identified and are explored to help to further define an interpretive language for abstraction. To evaluate these ideas, the author will discuss practical experimentation in the form of game prototype development. The aim being to create a playful experience whilst utilizing the identified design principles to encourage player interpretation of abstract ideas. Finally, by drawing parallels between the abstraction techniques used in experimental animation and experimental games, further experiments are proposed to improve our understanding of how audiences interpret abstract media.

Keywords: Abstraction, experimental animation, computer games, Abstract Art

1 Introduction

Abstraction can be applied across many fields for many purposes. In the context of this paper, abstraction will be discussed in relation to the visual and aural elements of media. In relation to the visual aspect, abstraction can be seen as the avoidance of representative forms. In abstract art "It has often been remarked that the word 'abstract' is not very happily chosen, and substitutes such as 'non-objective' or 'non-figurative' have been suggested instead" [1]. This is also true of experimental animation and experimental computer games.

In order to study experimental animation and computer games in depth, we must first seek to define what we mean by experimental. 'Conventional' media, in contrast to experimental examples are often a 'complete' experience, meaning that by the end of the game or film, even with passive audience engagement, the meaning is clearly communicated and resolution is given. This could be attributed to or be the cause of

audiences' need to find literal meaning in media [2]. In experimental forms the meaning may not be wholly clear upon first viewing, therefore the viewer may be required to watch or play again to interpret their experience. The piece may also require the viewer to shift their perception of the work becoming more 'intuitive and contemplative' [3] to expand their understanding. The Unfinished Swan (2012), is an experimental game for the Playstation 3 which encourages intuition in its navigation. Within the game, the user exists in a blank world which is difficult to navigate as all walls and pathways blend into one blank white canvas. In order to navigate the game world the player can 'shoot' paint to reveal the layout of the environment and possible routes to move around. This is a clear example of an experimental approach to navigation to draw player attention to movement and environment through interpretation.

It is possible to draw many parallels between experimental animation and experimental game development. For example, experimental animation is often produced by the individual or a small team [4] and the films themselves often seek to communicate personal perspective in an innovative way [5]. Many examples of experimental games are similar, being produced by an individual or small team, for example, the credits of The Passage (2011), Lim (2012) and Proteus (2011) state that the games were produced by individuals or small teams. Aesthetically, similarities can also be identified with visual abstraction commonly employed by both fields to represent or support underlying meaning. Visual abstraction in this context can mean the avoidance of literal representation of character or body, a shift of focus to movement and rhythm or shape and colour to represent complex concepts. Visual abstraction is readily applied to the animated film, as shape, movement and audio are the core modes of communication. Computer games also utilise these attributes with the addition of interaction. Abstraction can be applied in interactive media to connect the game mechanics or rules to implied meaning. Experimental games and animation also require their audience to read the media to take their perceived experience and interpret its meaning, in their own way or based upon the rules and conventions determined by the artist/designer [5].

In this paper, we will explore how experimental animation and experimental computer games both make use of abstraction as a fundamental design concept. We will question the meaning implied through abstracted media and will review to role of the audience as the interpreter of the art work as an 'open text'. Media analysis is used to identify design principles which are central to the production of an interpretive art work. To evaluate these ideas in practice, a game prototype was developed which aimed to create a playful experience whilst utilizing design principles to suggest meaning for the player to interpret. Finally, by drawing parallels between the abstraction techniques used in experimental animation and experimental games, we propose further experiments to improve our understanding of how audiences interpret abstract media.

2 Defining 'Experimental'

Experimental, abstract, non-objective and fine art animation are often used interchangeably to describe animation which avoids literal conventions in animation such as linear storytelling and character depiction. Instead the animator "moves towards the vocabulary used by painters and sculptors" [5] and aims to develop their subjective vocabulary in the depiction of abstract forms in motion. Innovation is central to the experimental aspect of animated forms, many artists "personalize their equipment and techniques as does any fine artisan or craftsman" [4]. The innovation of the animator

may be in the development of processes or apparatus. For example the invention of direct animation (drawing straight onto celluloid film) by Len Lye [4]. Others innovate in their mode of expression for example An Optical Poem by Oskar Fischinger (1938) is a work which acts as an "instrument for meditation" [4] as the viewer interprets the meaning of the movement.

As with Experimental animation, experimental game design also demonstrates a need for personal expression of the individual or team. The Passage (2007) [5] and Gravitation (2008) [6] by Jason Roher are both inspired by painful experiences in his personal life. Innovation is also central to experimental game development as developers tend to focus on the development of new types of player experience over graphical quality and commercial appeal which tends to lead more conventional game development. For example Fl0w (2006) by Jenova Chen and Nicholas Clark is the product of Masters Research into dynamic difficulty adjustment (DDA) conducted at the University of Southern California [7]. The game mechanics and design enable the player to adjust the difficulty in the game without conscious realization thus self-selecting levels based upon their expertise. Experimental games often rely upon abstraction, using simplified 'versions' of standard game paradigms or removing conventions completely to develop new meaning in a similar way to experimental animation, which moves away from graphic and stylistic conventions to create new work.

3 Abstraction in Experimental Animation

All animation is a form of abstraction, as the animated form creates a synthetic reality [8] within which the artist defines the rules. In the creation of this synthetic reality, animation requires that the audience suspend their disbelief (defer their judgment of the believability of an implausible world or event) in order to fully engage with the animated reality [9]. Characters are often present within conventional animation and offer a device for the audience to empathise with throughout a narrative [9]. These elements allow animation to caricature life without the audience disconnecting from the world. However, in experimental animation, it is less likely for characters in humanoid or anthropomorphized (the personification of non-human beings or objects) form to be present. Instead these forms, if they exist can be simplified into highly abstract forms.

Experimental animation has a very close link to audio as many experimental animators produced visuals inspired by or with music in mind. The animator, Norman McLaren developed a technique to utilize animated sound (where the soundtrack is created visually and copied onto the film) with direct animation [11]. The outcome of this process is a direct relationship between the sound track and movement on screen. Synchromy (1971) (Fig. 1) perfectly aligns the movement of shapes and colours with the soundtrack as the visuals of the film are the images used to produce the animated soundtrack [11]. As the sound was created prior to the visuals, the form and timing of movement was defined by the process of producing animated sound. McLaren [11] states that 'In general, the colouring was changed at the beginning and end of musical sentences or phrases for variety's sake; although no "coloursound-theory" was relied upon, pianissimo passages were usually in muted hues, and fortissimo passages in highly saturated contrasting hues.' Within this film, it is clear that McLaren was experimenting with technique over direct personal expression, however the application of colour to reflect the sound track adds visual information for the audience to interpret in relation to the syncopation of

movement and sound. Furniss [3], in discussing abstract animation in general, describes this facet of the media well 'It seems that abstract motion pictures are often 'about' the need to expand our ability to see, experience and comprehend things in day-to-day life. For that reason, they challenge the viewer to participate in the process of creating meaning.'

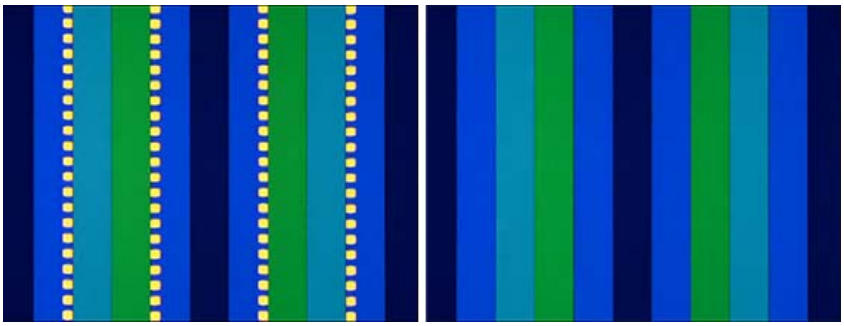

Fig. 1. In Synchcromy, McLaren utilizes form and colour in time with an animated sound track, to create harmony between sound and motion. The vertical movement of the yellow striations in time with the soundtrack (*left image*) is removed in time with the corresponding audio effects (*right image*).

The psychologists Heider and Simmel [10] conducted a study into apparent behavior which utilized an abstract animation of geometric shapes moving around in a scene with no specific context. The study was carried out through three experiments, each of which asked the viewers to interpret the film in different ways. The first experiment asked that participants describe the action of the film; the second asked that a different group of participants answer questions about the 'characters' in the film and the third asked another group to interpret the film when played backwards. These experiments found that the majority of participants described and perceived the geometric shapes within the sequence as 'animated beings' and therefore interpreted their random movements as motivated actions based upon the characteristics of their movement or the objects which surround them [10]. This study demonstrates a tendency for an audience to anthropomorphize abstract shapes and to interpret the types of movement carried out by the shape in terms of motivated action within a narrative construct.

These films utilise experimental animation to innovate and extend knowledge within their fields but each use different techniques to achieve this. Hider and Simmel's use of anthropomorphism demonstrates the power of interpretation and this is a technique often utilised in experimental computer games, again furthering the parallels between the two fields. McLaren's work instead seeks to perfect technical achievement in the visual representation of sound. However, the film could be seen as an anthropomorphism of the soundtrack, as it is represented as a living moving image upon the screen. Personality could be attributed to the different shapes and colours based upon the pace and pattern of their movement should the viewer wish to study these aspects in further depth. In

this way, both works help us to question the interpretation of movements regardless of form or artist intention.

4 Abstraction in Experimental Computer Games

As previously discussed, abstraction in experimental computer games can be identified in the visual, audio and design of the experience. The purpose for abstraction in experimental games could be attributed to many factors. Early computer games made use of low resolution or pixilated graphics, often to form simple geometric shapes. It could be suggested that people who play games are aware of this style of graphics and that games which utilize geometric forms or pixel art could perhaps be more easily accepted due to their familiarity. Alternatively, it may be that the small team size involved in development of these games requires the use of abstraction due to time, skill or team size constraints during production.

Lim (2012) by Merrit Kopas is a browser based game for the PC which utilizes geometric abstraction to represent all forms in a world. The environment is a maze, made up squares, the player character is a square and the other beings in the world are squares. Lim utilizes colour to suggest differentiation. The player character is a square which constantly changes in colour. All other beings in the world are either blue or brown. The game requires the player to hold a button to stabilize the colour of the player character, to 'blend' in with the beings around them, however the players view becomes obscured the longer they choose to blend as the camera moves close and closer to the character (fig. 2). Blending is a core mechanic in the game, as other beings in the world will be drawn towards and 'attack' beings which are different to themselves. These 'attacks' can make it difficult to escape these unfriendly beings.

Animation and colour are clearly a key factors in communication of the games core concept, blending will allow the player to go further in the game but will be an uncomfortable experiene. The staccato movement and limiting viewpoint of the camera leave the player only a small view of the world they are navigating causing disorientation. Choosing not to blend will avoid this experience but may limit player can exploration, due to seemingly negative interactions with other beings. Lim can be read as a game about difference and its mechanics could be interpreted by the player in relation to social, race and/or gender inequality. The abstraction of the world to simplest forms draws attention to movement and colour and in turns magnifies the core themes of the game itself.

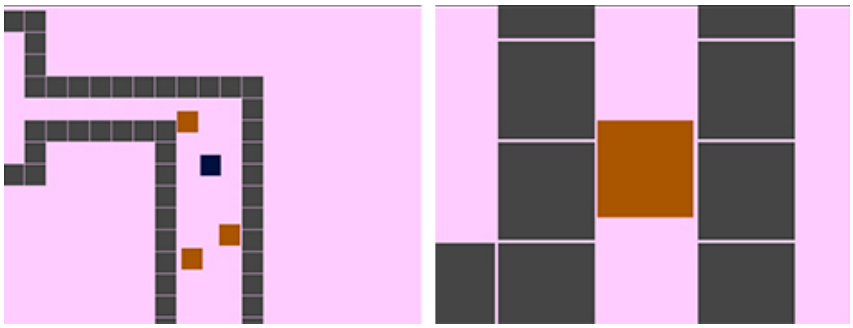

Fig. 2. The player square in blue is 'attacked' by the beings in the world in Lim (*left image*). When choosing to utilize the 'blend' mechanic, the camera position moves from its natural position (*see left*) to a closer, claustrophobic position (*right image*)

The Marriage (2006) is an experimental PC game by Rod Humble which uses geometric shapes to represent the game world. The Marriage is the story of a pink and blue square, within a world of circles. The pink square and blue square have different needs, and the player must choose the most appropriate time to intervene to balance the needs of each square. The player must recognize that the needs of one square can have a positive or a negative result on the other square. The game ends when the needs of both squares have not been met, and one has faded into nothing. The player has little control of the two squares; they can direct the characters to move towards one another, the rest of the movement in controlled by physics simulation. The squares float around in space, disconnected from one another. The circles within the world also impact upon the balance as some circles have positive impact, growing the size of the characters whilst other circles can cause the characters to shrink in size. The player can remove the circles from the world to try to negate the impact of 'negative' circles.

The game is seen by its creator to represent the complexities of marriage [12]. The game could be read in such a way that the animation and movement communicate different factors which affect a marriage, for example, the disconnection of the characters throughout the game could represent everyday factors which keep a couple apart, employment, hobbies or physical distance. On the other hand, this disconnection could also represent character independence as they move their own way and react differently to player interventions. The role of the player could also be interpreted as mediator within the marriage, for example, the ability to remove any of the circles could be seen as helping the partners to prioritise positive influences on their relationship over negative elements. The game can also be read in other ways, the mechanics are complex and it is not always clear how player intervention impacts upon the balance. It could be seen to represent any system which requires balance such as peace talks between warring countries or pest control in a vegetable patch.

In contrasting these examples with one another, the role of geometric shapes to represent the player or more widely to represent worlds demonstrates a trope in experimental game design. Within the marriage, the blue and pink squares represent a wife and a husband, and are presented within a context. Even if the title is overlooked, the use of blue and pink still have connotations of gender to lead player interpretation. On the other hand, the beings in Lim could be anything with opposing perspectives – animals, humans, cells; it open to interpretation. It could be said from this short study of experimental computer games, that abstracted graphics are often used to focus player attention upon the mechanics, animation or meaning of the experience. Abstracted graphics can remove graphic distractions, drawing the player's attention and interpretation to the most important elements within the experience.

5 The Language of Abstraction

We intend to show that experimental animation and experimental game design utilize a shared language of expression in relation to abstraction. We suggest that this language

requires development but could empower an individual in their perception, interpretation and interaction with these and other abstract forms.

This short study of moving and interactive works suggests that artistic language can be and is presently applied in their analysis. Abstract art in particular provides aesthetic language and conditions with which an individual can interpret experimental media. It is also possible to discuss these media in relation to temporal elements including tempo/pacing, choreography, musicality, and metamorphosis. Animation and game theory underpin discussion of these temporal elements. The interactive nature of computer games requires additional considerations of play and its link to meaning. Salen and Zimmerman suggest that "meaningful play emerges from the interaction between players and the system of the game, as well as from the context in which the game is played" [13]. Context is clearly very important to interpretation, as can be seen by the discussion of Lim in the previous section. Lim is open to interpretation due to the lack of context. The title of The Marriage, on the other hand suggests a context within which the player can interpret the meaning of the game. Interpretation of a different context is much more difficult in this case.

The same is true of abstract art. Much of the early abstract work of Picasso was abstract in 'everything but name' [14] suggesting the artist provide a name to give the viewer a foothold in interpreting the work. Experimental animation also demonstrates this as many examples have representational names such as Lye's Colour Box (1935) and McLaren's Mosaic (1966). Abstract art and experimental animation also share commonalities in the development of naming. Many artists moved to naming their works more sequentially in the style of a series of tests. For example the abstract painter Mondrian named a number of his paintings with the pre-fix 'composition' including Composition with Color Planes and Gray Lines 1 (1918), and Fischinger named many of his works sequentially including Studie Nr1 (1929), Studie Nr 2 (1930) etc. [15]. This demonstrates the iterative nature of the work and possibly reflects a preoccupation with abstraction more broadly as suggested by Gombrich [1] "if the interest should lie in neither the 'subject' – as of old – nor in the 'form' as recently – what were these works meant to stand for?."

Another common aspect of experimental work within these media is the creator's need for personal expression or experimentation within the work. Many of these works are subjective and provide insight into the current thinking of the artist. Studies of Lim suggest that it is an interactive account of the personal experiences of the designer [16]. Fischinger also held personal beliefs about 'true creation' believing that "We will only find true artists and masterpieces among the so-called experimental films and filmmakers. They actually use creative processes. The film isn't "cut", it is a continuity, the absolute truth, the creative truth" [17] it could be said through study of his work, many of his pieces search to achieve this goal.

6 Abstraction and Interpretation: Practical Experimentation

The authors developed a game prototype based upon this research into interpretation of abstracted graphics within experimental games. This practical experimentation aimed to explore the ways in which visual and interactive abstraction can alter interpretation. Prototype development was undertaken in two phases, the first was the production of a series of digital toys to test interaction and the second phase was development of a prototype game called Chreod.

The first phase of development tested routes to create a sense of play and engagement with meaning in an interactive experience. The authors produced a series of digital toys which utilized different input and feedback methods to engage the player physically and visually in the game experience. Many of these toys made use of simple geometric shapes in order to allow the player to project meaning onto the assets. During the testing phase, one digital toy in particular demonstrated potential.

Blend was produced for iPad and required the player to help a cube to navigate a hostile landscape (fig. 3). The landscape was littered with geometric forms which the player must negotiate in order to reach the exit. These forms were a series of cubes connected in T L and C like formations. The landscape was scanned periodically by a search light to check for isolated cubes, and if the player was not aligned to one of these environmental shapes it would cause the game to end.

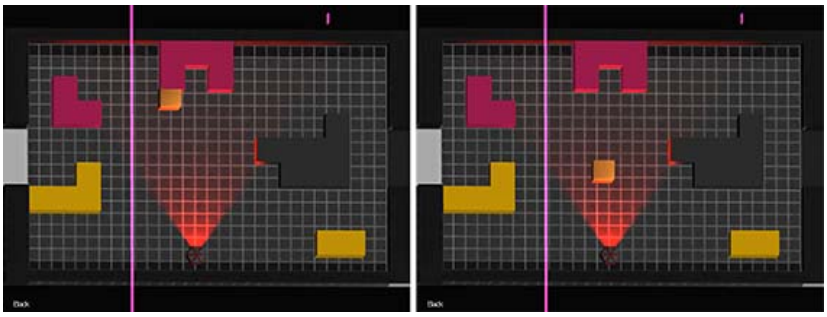

Fig. 3. Blend is a digital toy where the player character (*orange cube*) must avoid detection from the environment scanner (*pink/white line*) and a patrolling 'guard' (*grey hexagon*) In the left image, the player character has successfully avoided detection by blending into the environment (*the pink C shape*). In the right image, the player has been detected by the 'guard' as a standalone cube, this leads to game over.

The player could not directly control the movement of the object, instead they would select a point on the map and the cube would move in an elastic manner from its start position to this new position. This addition of easing in the beginning and end of the motion was designed to cause a delay between player interaction and object movement in order to focus attention on the timing of their interactions. This prototype was inspired Lim's blending mechanic. Informal testing of Blend demonstrated that the design required players to concentrate upon timing to complete the level and that environmental awareness became more important to their success. Blend greatly informed the design of mechanics to lead player attention in the development of the final prototype.

The second phase of development was the production of a game prototype called Chreod (fig. 4). This prototype is inspired by Waddington's concept of The Epigenetic Landscape' [18]. Waddington developed a metaphor for cell differentiation as an object rolling down a landscape, and at any point, the landscape can branch and the route which the gene takes will change the course of its development. The core concept of an environment shaping the development of an object was used to inspire the design of the game.

Fig. 4. In Chreod, the player interacts with the landscape by tapping buttons (blue and red target) which appear in the world for a short time. The player aims to roll over areas in the landscape of the same colour consecutively to build speed.

Chreod allows the player to modify and manipulate parts of a landscape which the sphere exists within. As the player changes the landscape, the sphere will roll around, 'exploring' the world. Within the world there are coloured areas, as the sphere rolls over these it will change in colour, being affected by the landscape. If the player can cause the sphere to roll over a number of areas of the same colour, the player is rewarded with a speed boost. Should a player roll over a different colour, the speed is lost, and the object blends this new colour into itself; the landscape truly 'shapes' the colour of the object.

The lack of direct interaction with the object was inspired by The Marriage where a player must choose the 'correct' time to intervene. In this prototype, gravity and physics simulation control sphere movement, therefore, the player must interpret if their interaction will change the landscape enough to impact upon the path of the sphere. Interactions are unpredictable; if an interaction is too early, a boost in speed, if the interaction is too late, it may have no impact at all.

The visual abstraction within the game is based upon simple differentiation; round organic forms represent that which can be changed and sharp geometric forms represent those which cause the change. The contrast in form hopes to offer interest for player interpretation. The landscape has only two colours at present, blue and red. Gender specific colours were avoided but contrasting colours prove important should colour preference play a role in the way a player chooses to navigate the world.

This prototype was recently completed and it is hoped that testing can take place to analyse the relation between the abstracted visual style and game mechanics and player interpretation. In particular the authors hope to host focus groups where players will interact with the prototype and will provide qualitative description of their understanding of the purpose of the game.

7 Discussion and Conclusion

By identifying common elements across a range of experimental animations and games, we have shown that there is a need to further refine ways of discussing abstracted

media to equip the individual with tools to engage with abstract work more readily. Experimental animation and computer games demonstrate a wealth of personal expression and innovation in terms of technologies processes and game mechanics. These media present the audience with an experience which they must interpret and challenge the viewer or player to reconsider their views or perception of the work and the world around them. This study has also shown that practical experimentation with abstraction can also offer new insights into the understanding and interpretation of abstraction within digital media.

This exploration was limited to the study of geometric forms within experimental game and animation production. Further work in this area could include study into more 'organic' experimental animations and games and also the study of experimental film more broadly. It is clear that these two forms run in parallel, sharing many common attributes. Further exploration of cross-pollination in terms of practice and also inspiration may also help us to better understand the underlying motivations of the artists and in turn the work itself. It is possible to use the parallels between these media and other abstract forms to inspire the development of further media and also perhaps the expansion of the language of abstraction.

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To Whom it may concern,

Please accept the statement below as confirmation of the contribution that Lynn Parker made to our co-authored paper, 'Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere'.

On Tuesday 8th July 2014, Lynn Parker and I presented our co-authored paper 'Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere', at EVA 2014 (Electronic Visualisations and the Arts), London. The paper was presented as part of the Research Workshop session: Imaging technology for culture. The paper was published by BCS: The Chartered Institute for IT.

Lynn Parker made an invaluable and integral contribution to the authorship of our paper, including the research, case study development, execution and data collection that preceded the written paper.

In her professional and academic capacity as Animator/Researcher, and my capacity as Curator/Researcher, Lynn and I collaborated to investigate communication through movement within Animation and Dance.

Lynn's knowledge, expertise and commitment were intrinsic to the authorship of the paper, drawing upon her conceptual insights and practical skills. Together, we undertook a period of critical reflection and discussion surrounding historical professional experimental animation and dance performances, and then developed the research further through specific analysis of our case study - the digital dance performance Forever Falling Nowhere.

Lynn played an integral role in every facet of the paper. Indeed, the paper would not have been realised without her invaluable contribution.

Yours sincerely

Clare Brennan

Animating Dance and Dancing with Animation: A Retrospective of Forever Falling Nowhere

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Experimental animation and contemporary dance share a number of concepts, including the abstraction of ideas and themes, seeking to communicate with an audience through movement, syncopation, shape, and rhythm. Within this paper the authors investigate communication through movement within these two forms, firstly through discussion of professional experimental animation and dance performances and secondly through specific analysis of the digital dance performance Forever Falling Nowhere. The paper documents discussion with the choreographer, dancer, animator and the audience, seeking to examine the connection between the concept of the piece, the use of movement to imply meaning from the point of view of each of the creators and the audiences' perception. The paper will conclude by reflecting upon the importance of interpretation within experimental works asking if Norman McLaren's definition of animation can be used to draw deeper meaning from digital performances.

Experimental animation. Contemporary dance. Hybrid digital performance. Abstraction.

1. INTRODUCTION

"What happens between each frame is more important than what happens on each frame" (McLaren [no date], cited in Solomon 1987, P. 11). Norman McLaren's definition of animation is one of the most quoted insights into the animation process (Wells 2002, P. 6) suggesting that his words resonate with the animation community. This definition is expanded by McLaren to state that "animation is the art of manipulating the invisible interstices between frames" (cited in Solomon 1987, P. 11) therefore, it is clear, that to McLaren it is not the individual creation of a frame of animation but more the decisions that are made between each frame or from frame to frame which "more accurately defines the animator's art" (Wells 2002, P. 7). Within this paper, the space between the frames is observed closely, looking at the creative process undertaken in producing experimental works paying particular interest to the meaning suggested by manipulation and its product (movement) which is created within this space.

Erin Manning is a practicing artist in the fields of dance and interactive installation and is also a cultural theorist and philosopher. Manning (2012, P. 6) presents a definition of movement, which draws parallels with that of McLaren, she discusses preacceleration, "the virtual force of movement's taking form" where a movement is felt in the body before it is actualised. Preacceleration is the creative potential of a movement before it becomes a movement influenced by external forces and physical limitations of the body. In this way, preacceleration is to physical movement as McLaren's definition of the space between the frames is to animation: Potential in the creative freedom of movement, and its actualisation within a film or performance. Preacceleration can be seen as the creative process of the dancer and animator whereas movement itself is the product; the dance or animation actualised within a space or upon a screen.

This paper discusses movement within experimental animation and dance with consideration of expression, emotion, and interpretation. Using the works of existing artists as a conceptual framework, the original performance Forever Falling Nowhere (2013) is examined from the perspectives of both the creators and the audience.

2. BACKGROUND

The art creation process can be seen as a cycle; the artist has intent, the intent turns into a product and the product is viewed by an audience. Reflection upon the artwork by the artist may lead to further artistic intent and the cycle begins again. When working beyond representational form, the work of an artist, whether an abstract painting, a poem, an experimental animation or dance, requires some level of interpretation: Interpretation by the artist of their intent in making a work, and interpretation by the audience to engage with the work to make meaning of it for themselves (Furniss 2008). Experimental Animation and Dance share many parallels; they utilise time, movement and music to "create narratives" (Wells 1998, P. 112) and often require interpretation to be understood by the audience. The art creation process for such works demonstrate further parallels, specifically in the intent of the artist, the work itself and its interpretation by an audience. These three stages of art creation will be analysed, through study of the Animators Norman McLaren and Oskar Fischinger and the choreographers Martha Graham and Isadora Duncan. These artists were selected for this study as there is a common theme throughout their practice of emotional expression. This emotional expression is of particular interest as it provides a foundation for discussion of the interpretation of the work.

2.1 Artistic Intent

Fischinger, McLaren, Duncan and Graham share the wish to express emotion, through movement. McLaren sought to express his "inner feelings", but not his "inner thoughts and opinions" (McLaren 1971, cited in McWilliams 1991, P 38). He claims "In Begone Dull Care, I'm telling them how I feel about that music; in A Chairy Tale how I feel about the chair being sat upon." McLaren used film to convey his personal and automatic reaction to phenomenon whether it be an object, sound track or colour. The response motivates the work, which in turn informs his ideas about the work. Conversely, Duncan ([no date], cited in Daly 1995, P. 30) believes that dance is "not only the art that gives expression to the human soul through movement, but also the foundation of a complete conception of life." To Duncan, movement in dance communicates fundamental aspects of life and expresses the innermost thoughts and desires of the creators. This philosophy is somewhat shared by Oskar Fischinger.

Fischinger named many of his early animations sequentially, demonstrating his focus on development of skills and understanding. He saw these studies to be experiments to develop his grasp of technique until he perfected an approach to "produce expressions which had to be brought into reality - and were somehow deep inside as subconscious desire, ideal or image existing from the beginning" (Fischinger 1949). Graham echoes this experimental approach claiming that "Movement in modern dance is the product not of invention but of discovery – discovery of what the body will do" ([no date] cited in Freedman 1998, P 64). It becomes clear that experimentation through trial and error is central to the communication of these artists and in doing so, they can consciously or otherwise unlock meaning and expression in their work. Graham ([no date] cited in Freedman 1998, p. 56) believed "If it could be said in words, it would be: but outside of words, outside of painting, outside of sculpture, inside the body is an interior landscape which is revealed in movement" and Fischinger (1949) supports this, extending his discussion of animation in particular to "I want this work to fulfill [sic] the spiritual and emotional needs of our era. For there is something we all seek -- something we try for during a lifetime working at filmmaking,…hoping despite all that, here and there, one day, perchance, something will be revealed, arising from the unknown, something that will reveal the True Creation: the Creative Truth!"

Clear artistic intent underpinned the creation of work, either seeking to express emotion through reactive (as McLaren) or experimental iterative practice (Graham and Fischinger). Their practice is evident within their creative outcomes and provides further insight into the modes of communication utilised to actualise their intent.

2.2 Expression through Motion and Syncopation

Motion of the body whether animated or physical is the primary mode of communication for these artists. Duncan and Graham share a pre-occupation with nature in their choreography, Duncan rejected control (Daly 1995) whilst Graham relied on control of the breath and contrasting motion (Freedman 1998). Duncan's performances utilised free flowing gesture which often seemed improvised to her audiences (Daly 1995). Graham on the other hand believed that by mastering breath, the source of life, she could "could convey heightened emotions. Intense feelings were revealed not simply by gestures of the hands and arms, but through powerful contractions and releases" (Freedman 1998). "By focusing on the basic activities of the human form, she enlivened the body with raw, electric emotion" (Marthagraham.org 2012). McLaren also utilises contrast in his film Pas De Deux (1968) as the dancer of the piece interacts with a double of herself. The double holds poses on the screen which act as silhouettes to foreshadow the fluid movement of the dancer. The juxtaposition of

stillness and movement and multiplicity of form communicate themes of frustration and separation (McLaren 1974, cited in McWilliams 1991, p. 41). Fischinger's film Optical Poem (1937) also focusses on the body, studying body and movement of "the parts of a whole and the whole itself" (Bendazzi 1994, P. 124). This film utilises geometric forms to act as different parts of an orchestra. The motion is individual at first, but as the music and melody builds, implied relationships are created between the forms as they become connected through invisible ties unifying their movement whilst remaining individual.

Music and sound can play central role for the creation of these artists' work. Sound can lead and inspire the motion itself through syncopation (as discussed in Optical Poem) or sound can be created after the visuals or choreography to provide accents to the meaning of the work itself. Duncan was one of the first dancers to utilise concert music in conjunction with her dances (Acocella 2013) which motivated her use of figurative motion and in some cases narrative. Fischinger also utilised music in this way, believing that "music is the concentrated form of the thought and emotion of composer" (Whitehall [no date], in Russett & Starr 1988, P. 60). In the field of dance, Graham was seen as a pioneer through collaboration with composers to produce bespoke music which enhanced the syncopation of her work (Freedman 1998). In Frontier (1935) the mix of fast staccato motions are underpinned by upbeat wind instruments, whilst a section where she seems to float across the floor, facing the audience throughout is supported by a high pitched string section which suggests defying gravity. McLaren shares this interest in synchopation, his "style consists especially of rhythm and coherence (or even fusion) of the visual rhythm with the rhythm of sound" (Bendazzi 1994, P. 117).

Harmony between sound and motion is a central concern for these artists. Duncan aimed to fuse two "sister arts" dance and music and the pioneering use of a symphony in Blue Danube (1902) inspired her interpretive powers and modes of expression (Duncan 1958, P. 9). In animation, Fischinger also sought for a link between visual rhythm and sound rhythm (Bendazzi 1994) as he believed "the application of acoustical laws to optical expression was possible. As in the dance, new motions and rhythms sprang out of the music - and the rhythms became more and more important" (Fischinger 1947). Conversely, Graham's later work moves towards dance as an independent art which is particularly evident through the sparse soundscape and staccato choreography of Primitive Mysteries (1931) (Daye 2010). For McLaren, the connection was more intuitive as he "used to see abstractions in his mind as he listened to music. With film, he realized he could make these abstractions visible" (McWilliams 2006).

2.3 Audience Interpretation

Experimental or abstract works require the audience to "read" or interpret the media in order to make meaning for themselves (Furniss 2008). Bendazzi (1994) believes that "At first viewing, McLaren's work usually baffles the spectator. The exuberance of the unusual techniques, the absence of a 'meaning', the apparent coldness, are difficult elements for an audience used to other means of communication." It is McLaren's avoidance of conventional narrative storytelling that leads to this confusion. Both McLaren and Fischinger rely upon movement, audio, and syncopation to communicate their message. McLaren believed that minimising visual elements which were not core to his message allowed more direct communication with his audience (McWilliams 1991). Abstraction was a tool to help him communicate but could also be read as alienating a section of his audience. Fischinger on the other hand believed in True Creation, and that "The real artist should not care if he is understood, or misunderstood, by the masses. He should listen only to his Creative Spirit and satisfy his highest ideals, and trust that this will be the best service that he can render humanity" (Fischinger 1949).

Fischinger's work is appreciated by film historians and animation scholars, and in his home country of Germany and throughout Europe his early films were widely screened (Russett & Starr 1988). Fischinger moved to America, to work with Warner Brothers and later with Disney. Both partnerships ended early due to disconnect between commercial animation expectations and Fischinger's ideals (Whitehall [no date], in Russett & Starr 1988).

As Duncan was a pioneer of contemporary dance, her audience at first found her approach novel, many attending her performances to debate the need for visualisation of classical music (Duncan 1958). Her performances grew in popularity due to her ability to communicate her imagination through dance and her presence on stage, which left an impression upon her audience, even those who did not understand her art (Duncan 1958). For those who engaged with her work they saw her performances as an expression of their own internal thoughts and feelings (Daly 1995). Graham also evoked this feeling within her audience; she performed throughout times of political and social unrest and many saw her performances as a beacon for their desire for change because she ingrained "the struggles of the individual" within her practice (Marthagraham.org 2012). Graham's work predominately relates to American life, and European audiences felt that

”she was “reenvisioning [sic] the very idea of dance claiming that her performances were indescribable and needed to be experienced in person (Korppi-Tommola 2010). In reflecting upon her own career Graham said “I’m afraid that I used to hit audiences over the head with a sledgehammer because I was so determined that they see and feel what I was trying to do. Now I know…that you must draw people to you, like a magnet – perhaps by the intensity of your own belief” (Freedman 1998).

3.0 HYBRID PERFORMANCES

Animation is predominantly screen based media and although it shares a great deal with dance, it does not typically exist within or inhabit a three dimensional space in the same way as dance. Digital Performance is the term broadly used for physical performances which make use of digital media (Dixon 2007) and there are many examples of works which have tried to fuse these two worlds, recognising their strengths to create a new form of expression. Wells (2002, p. 6-7) claims that “the potential reorientation [within animation] of the physical and material environment under these terms and conditions also re-configures the ways in which the psychological, emotional and physical terrain may be explored.” In a way, digital performance extends this definition of physicality, bringing animation into a performance space. There are many successful examples of digital performance including the digital dance works BIPED (1999) and Resonate (2013) and the theatre and dance performances of 4D Art including Icarus (2014) Anima (2002) and Beauty and the Beast (2011).

Digital performance, the fusing of the physical world and animated world extends both forms by allowing animation to inhabit a space and providing dance with methods to reframe performance.

Forever Falling Nowhere was a collaborative project involving experimental animation, projection, contemporary dance and musical composition which resulted in a site-specific live performance as part of NEoN Digital Arts Festival. The project was thematically inspired by Ray Bradbury’s short story “Kaleidoscope” and drew some aesthetic inspiration from the psychedelic visuals of the Kaleidoscope, invented by Scottish designer Sir David Brewster in 1816.

This performance was achieved through a mutual desire to collaborate in an authentic way, through a shared love of the narrative inspiration and a genuine curiosity and appreciation of each other’s practice. It was an entirely inter-disciplinary process, however all collaborators brought their own individual sources of inspiration, motivation and interpretation; their own creative intent.

The piece was structured in a way which allowed the dancers and the projected animations to make both a physical and aesthetic journey. Set in an open industrial space the performance areas stretched throughout the room, creating a semi-promenade staging style where the audience were encouraged to move through the space as the performance developed. There were five chapters of the performance which enabled the narrative to unfold as we tracked the dancers and the animations through each chapter. These can be defined as:

(i) Ambient movement within projected animations. Dancers walking, running and gliding throughout the space and amongst the audience. There is a droning soundscape which floats in the air, becoming heavier as the scene progresses.

(ii) The solo dancer begins to breathe slowly and deeply, contracting and releasing. An abstract animation of her breath grows to form her shadow. Multiple animated digital doubles appear and begin to defy gravity, breaking the monotony of the repetitive movement. The second dancer appears and they begin interact with their animated shadows, at first manipulating each other and then slowly breaking away.

(iii) The third chapter takes us to another area; a physical structure of large cubic shapes which have a series of projections building on them. It feels chaotic and dangerous. As the scene progresses the dancers begin to work in tandem, supporting and controlling each other’s bodies. Soon they are in tune and a sense of control is discovered.

(iv) The atmosphere changes as the tempo of the music slows. The focus shifts again to another area of the space. There is a sense of the beginning of something new, of peace and serenity born out of chaos.

(v) The fifth chapter connects all three performance spaces as the dancers are separated, moving to either side of the space. The mood is one of reflection, each dancer interacting with filmic version of their memories where they reflect, in isolation until they meet their end.

Figure 1: *Photographs from the performance Forever Falling Nowhere (2013). On the left is an image of the dancer interacting with the digital doubles in Chapter two and on the right is a tender moment from chapter four. Images courtesy of Robyn Mayer, 2013*

3.1 Study Design

To gather information regarding audience experience and interpretation, and to gain insight in to the co-collaborator's experience, development process, creative intent and personal meaning, we developed two questionnaires; one directed at the audience and one designed for the co-collaborators. We selected a small but diverse cross-section of audience: two males and 4 females, aged 20-42 which reflected the ratio and diversity within our audience. The co-collaborator questionnaire was completed by the Choreographer, the Animator, the Visual Effects designer, the Musician and the Festival and Events Curator. The results from these questionnaires will be used to analyse the performance.

3.2 Viewpoints and Interpretation: Results

3.2.1. The Co-Creators Responses

In the early stages of the creative process there were clear shared visions for the thematic journey of the piece. Initial conversations and early iterations of creative material, be it dance, animation or music, were created with the desire to evoke feelings of love and death, recalling memories of relationships, and to depict moments of isolation and space. As the journey of creating the performance developed there were a number of key points where these themes, and the individual interpretation of these themes began to expand and evolve. Within each chapter we reached deeper in to the story. The dancers began to play with the animations, to play with the space, to explore physical limitations and to feel, understand and interpret the narrative.

When asked to identify the themes of the project, the collaborators interpretations varied greatly. The spirit of the words used was in keeping with the original concept of the piece, but it is clear that each of the collaborators had moved beyond the initial concept to make something new for themselves. Death and love were the most commonly cited themes (three citations each) followed by reflection, isolation, relationships and morality (2 citations each). There were 16 additional words used to describe the themes of the project which had only one citation each. These included: Serenity, longing and morality

The results suggest that extended periods of play and experimentation within the development process produced the most memorable results for the co-creators. The data reveals specific moments when all collaborators were in tune with their interpretations of the themes and when their creative intent was shared. The results also identify moments where the creative intent and interpretation was in conflict. The limitation in terms of experimentation in the development phase may be a factor.

In an early part of the performance the Choreographer and Animator seem to be striving for contrasting effects; the animator talks of communicating a 'desolate emptiness', whilst the choreographer was trying to 'create chaos.' However as the development of the performance progressed the collaborators ambitions converged.
In chapter two the choreographer and animator wished to achieve a sense of weightlessness, exploring bodies in suspension. The animator designed the visuals to support and amplify the dancer's sense of weightlessness, creating another dimension to achieve the sense of defying gravity. It was felt that this helped to convey the notion of new life and the routine of everyday life. The animator then introduced a change in the colour palette with the intention of representing a freedom from routine and monotony which aligned with the choreographer's effort to build an energy and intensity. The musician sought to support the initial sense of repetition and then as the scene progresses the music evolves to find an obscure rhythm to build energy and momentum.

The results suggest that the collaborators begin to feel more in tune with each other as the chapters of the performance progress. The animator talks of creating an ambience which is 'slow, thoughtful and reflective', which mirrors the choreographer's intention to show the body breaking down reflecting upon 'a life that they may have lived before' until 'the body returns to dust'. The animator utilised soft shapes which move slowly through space building the intensity of colour to show that although life is a cycle, the world is richer from this journey. When creating these visuals the animator commented that "the music became a motivating force for the animations and the objects within them" and noted that it "enhanced the connection between the visuals and the dancers' movements as the sound tied these together". The musician drew inspiration from film soundtracks, utilising analogue technology to harness a vintage sound evoking nostalgia and romanticism of memory.

The collaborators identified having the greatest personal connection to chapters four and five. Chapter four drew attention to personal relationships of two of the collaborator, causing them to reflect individually own their own experiences of relationships. Chapter five, evoked reflection upon memories and childhood. One collaborator identified regret in amongst their experience. Three of the collaborators made little reference to their own personal connections to the performance. Two collaborators instead focussed on the development of technique or skills

3.2.2. The Audiences' Responses

A cross-section of the audience were given the opportunity to feedback on their experience of the performance through the questionnaire. When discussing the themes in the broadest sense there was a general agreement from the audience members that 'connectivity' was the main theme (five citations). Audience members also identified love (three citations), relationships, separation and support or reliance as underpinning themes (two citations each). There were a further 13 themes presented with only one citation each. These themes varied widely from body image to the vastness of the universe.

As the respondents elaborated on these themes they spoke of moments when they interpreted the movement as metaphors for connectivity, support and reliance. One audience member recalls that the movement of the dancers demonstrated a shift from effort to fluidity as they "were starting to work together and depend on each other, it wasn't a smooth transition but by the end they were working in tandem." Another respondent elaborates on the ways in which the dancers and animation worked together to enhance the theme of connectivity by saying, "They built upon each other and it felt seamless. The dancers' movements seemed like a part of the animation in the projection. Also I felt like the dancers gained a story and character throughout the performance, they were telling a story not just moving through a space."

However, when discussing the finer details of their interpretation of narrative it was revealed that they reflected their own life experience upon the story. As individuals they began to identify their own memories and so the perception of the narrative differed greatly from person to person.

One respondent said that they "loved the part where the dancers seemed to be travelling in space. People looking out at the universe, so large and awesome is always really evocative and moving to me. Quite magical." Whereas another interpreted the whole performance to relate to "the idea of being able to see something beautiful in something tragic – through memories and experiences." In contrast, one respondent suggested that the creators of the visuals "were thinking strongly about pregnancy, or the act of biological creation" and another participant recognised the subjectivity of the experience stating that "if I was to re-watch it again there would be different parts and had my life story been different there would be other parts and that's the part, you know, any good art is a mirror in a strange way. It didn't force me to feel anything, it let me feel something."

When asked about the most memorable element of the performance, in terms of modality (animations, dance, music) six of the respondents commented upon the connection between the music, movement and projections, stating that no single element stood out but rather they worked together to create a total experience.

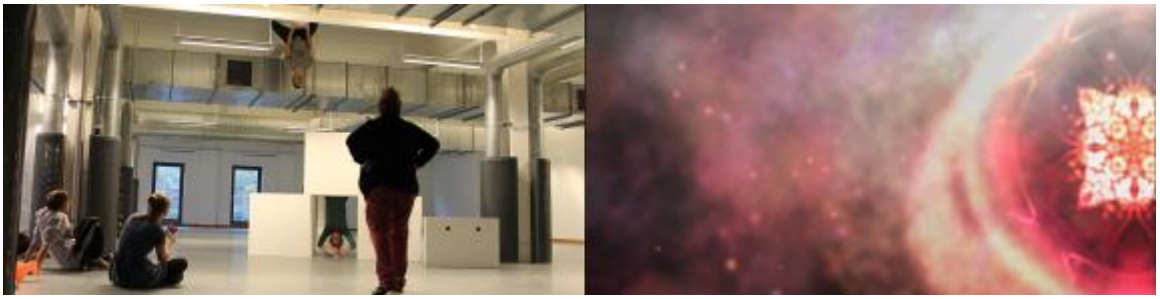

Figure 2: *Forever Falling Nowhere (2013) fused interdisciplinary practices of dance, animation and music to create a total experience. The image on the left is the collaboration in process and on the right is a still image from the animation for chapter four. Images courtesy of Lynn Parker, 2013.*

4.0 DISSCUSSION AND CONCLUSION

The results from this study demonstrate the breadth of interpretation of artwork from both the perspectives of the creator and the audience. Within the creative team, intent varied from artistic communication to development of technique. From the discussion of McLaren and Fischinger, it is clear that technique must often be refined before concept is applied. The different priorities within our creative team support this philosophy and also demonstrate the diversity of the creative process. The development of the performance required collaboration between diverse disciplines and the development of a shared language. The projects strengths are in the iteration of this aspect, in the considered and sensitive development of individual elements in relation to the performance as a whole. The approach to movement within animation and dance was heavily underpinned by bespoke music, which was iteratively developed as the themes of the project evolved. Like Graham, the team relied on music to guide physicality of the action and like Fischinger, we hoped to created harmony between the visuals and music.

The audience as a whole identified broadly similar themes, highlighting key elements such as connectivity, love, relationships, separation, support and reliance. These differ slightly from the intention of the creative team; however the themes of love, and relationships were interpreted by the audience. The universal nature of these two themes may have aided their communication as audience members apply their own values and experiences to their interpretation of the experimental aspects of the performance. The audience results further support this idea as many of the respondents reported an emotional connection to the fourth chapter in particular, which was the most abstract of the performance.

The chapters of the performance where the animator and choreographer clearly maintained a shared vision were very positively received by the audience, and allowed the audience to create their own meaning within the spirit of the work. Where there was a slight difference in vision, the audience responded less positively or failed to comment.

In discussing the work of Fischinger, McLaren, Graham and Duncan, it has become clear that expression through movement can be achieved in countless ways. These four artists are responsible for a wealth of experimentation with movement, music and expression and are a small sample of practitioners within their fields. Experimental animation draws a great deal from contemporary dance and dance can and is learning from animation through augmentation of space and the body in digital performances. This short study of digital performance and the work of these four practitioners demonstrates potential for both technical and expressive development through further interdisciplinary collaboration. The analysis of Forever Falling Nowhere echoes this sentiment as the audience considered the performance as a total experience rather than focussing upon one distinct art form within the piece.

This study utilises a small number of audience respondents to what was a well attended event (200+ people). This cross-section is representative of the age, gender and background of attendees so provides some small insights into the impact of the performance. To fully corroborate the findings of this paper this study should be extended to a larger sample.

In reference to McLaren's definition that animation is what happens between the frames, this research suggests that the collaborative interdisciplinary nature of digital performance pushes the boundaries of what is possible in movement and

expression. It is this interaction, this discussion and iteration in-between the making of movement which strengthens expression and meaning.

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Statement of Co-Authorship: The Game Jam Movement: Disruption, Performance and Artwork

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This paper was co-authored by the research team of the Development Cultures Project. Lynn Parker was responsible for the proposition of participation and social interaction as an artwork within the literature review. She developed critical underpinning for this positioning and utilised project data to support these claims. Lynn also led the analysis of the design techniques used within this project to foster development of a community and to support their collaborative creative endeavours. This analysis was undertaken through engagement with practical outputs from the project, interview data, and social media activity around the project.

As co-authors we were responsible for developing the basis of literature around game jams, their process and their stance as a performance. We also contributed to the position of play as a technique to enhance the development of a community and the write up of the activity undertaken throughout the development cultures project.

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Yours sincerely,

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The Game Jam Movement: Disruption, Performance and Artwork

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ABSTRACT

This paper explores the current conventions and intentions of the game jam - contemporary events that encourage the rapid, collaborative creation of game design prototypes. Game jams are often renowned for their capacity to encourage creativity and the development of alternative, innovative game designs. However, there is a growing necessity for game jams to continue to challenge traditional development practices through evolving new formats and perspectives to maintain the game jam as a disruptive, refreshing aspect of game development culture. As in other creative jam style events, a game jam is not only a process but also, an outcome. Through a discussion of the literature this paper establishes a theoretical basis with which to analyse game jams as disruptive, performative processes that result in original creative artefacts. In support of this, case study analysis of Development Cultures: a series of workshops that centred on innovation and new forms of practice through play, chance, and experimentation, is presented. The findings indicate that game jams can be considered as processes that inspire creativity within a community and that the resulting performances can be considered as a form of creative artefact, thus parallels can be drawn between game jams and performative and interactive art.

General Terms

Documentation, Performance, Design, Experimentation.

Keywords

Game jams, participation, collaboration, improvisation, performance, Kaprow, Happening, disruption and innovation.

1. INTRODUCTION

Game jams are recognised as unique social events in which groups of like-minded creatives from 'game-making' disciplines collaborate and improvise together within predefined time constraints [13]. The purpose of this exercise is to encourage creative experimentation and to develop rapid prototypes of game designs in 'a culture of sharing ideas, play testing and collaboration in an immediate setting' [29]. Game jams are distinguished by the mimesis of studio practices visible in contemporary game development, an area where a 'rich trans-disciplinary mix of the fields of art, narrative, programming and design' can be found [37].

As the literature on game jams has expanded, the discussion has shifted from one of definitions to one of epistemology. This paper aims to expand the discussion on game jams by considering what a game jam means to facilitators, participants, and communities. Game jams have been extensively studied in relation to the benefits to the development community [30,34], learning possibilities [26,33] and their construction [13,29]. However, while plenty has been written about the process of the design and development of jam events, there is a dearth of material which investigates their presentation as artefacts that disrupt thinking and methods of practice.

Game jams are a relatively new phenomenon, and the roots of the term can be traced back to 2002 [34]. Seminal annual events such as The Nordic Game Jam [27] and Global Game Jam (GGJ) [11] have developed increasing cultural recognition with the latter event achieving an estimated global in-person participation of 21,000 people [11]. The widespread popularity of game jam events can be attributed to a number of factors. Firstly, the multidisciplinary nature of the activity is inclusive of other creative fields such as design, art, code, technology, audio [26]. Secondly, the collaborative nature is of interest to several fields including business, research and education [5,34]. Finally, the community building nature of events is welcoming to heterogeneous groups of people encompassing professionals, academics and hobbyists [30,23]. Regardless of the particular reasons for the proliferation of game jams, it is clear is that they are deemed to be of considerable value by the academic community, given the volume of literature on game jams that has emerged in recent years. Alternatively, it can be claimed that game jams instead employ an insular structure more in line with Kaprow's Happenings - where the audience creates and shapes the artwork through participation [19], with intrinsic artistic value emerging from situation and a performance [32]. Current literature does not seem to consider the artistic merit of game jams in a performative frame, which when considered as an artefact itself, can be seen to share qualities with temporal participative artworks such as Kaprow's Happenings and from which unique processes and innovations are able to emerge.

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2. PROCESS AND OUTPUT

As previously defined, a game jam is a time-constrained creative event in which a community of multidisciplinary participants collaborate and improvise to create game prototypes, often experimental, in response to a theme. However, game jams can move beyond the notion of a creative response and can instead analyse, disrupt and evolve the themes and motives on which they are conceived. Furthermore, game jams are not exclusive to the games development industry from which they were birthed. Rather increasingly, game jam events are finding traction with non-professionals (students, academics and hobbyists) who enter for the experience and the exposure to process [37]. Just as much as game jams can be experienced as a platform for creation, they can be a platform which promotes ideas for learning, accessibility and diversity [7,8,30,33]. As a result, there are no prescribed formal frameworks for the processes of a game jam, instead they are best described as a mix of design and development strategies [26]. Goddard et al [13] distinguish three game jam types: Indie Game Jams, Industry Game Jams and Academic Game Jams. All forms are similar and the differences are driven almost entirely by context. What is commonplace among jam types is that the primary goal is for participants to collaborate for the purposes of rapidly creating a prototype. Musil et al [26] describe the game jam concept as 'sketching interactive software prototypes within the least possible amount of time'. The application of temporal constraints, or 'timeboxing' [13] is standard process in many jams and is typically limited to a set number of hours (12, 24 and 48 being the most common). It may be assumed that a major factor such as time constraints will have an impact on both the scope and quality of the prototype developed. As a primary output the prototype exists as the artefact at the centre of a team's activities and negotiations. Prototyping is a central element of game development, but in the context of jams, there is a shift towards prototyping in rapid succession through short frequent iterations to evolve or refine gameplay mechanics and related audio-visual assets. Manker and Arvola [24] suggest that one the core functions of a game design prototype is to act as a shared representation to support communication and collaborative work, this argument evolves the understanding of a prototype beyond just a physical result of labour, but one of teamwork too.

As games are 'increasingly being applied in contexts beyond entertainment' [33] game jams too are exhibiting functions and ideas that differ from commercially driven game prototyping. Game jams are blooming into a platform which disrupts, becoming 'corrective to game creation as it is normally practiced.' [31]. In this way, game jams can provide a platform for facilitators and practitioners to look inwards and challenge central ideals of the jam itself, including the aims and objectives of the event, the practices and processes it promotes and the participative space it inhabits.

3. PARTICIPANTS, PLACES, AND SPACES

Dourish [9] distinguishes between space and place, arguing that these respectively are the physical and social constraints placed upon an environment. This aids discussion of the myriad of activities which take place within a game jam highlighting a need to consider both the effect of physical spatial arrangements on the jam and its participants and the impact of social denotations of 'place' upon participant interaction and the community. Game jam events, which could be considered as 'informal collaborations' [15] need to facilitate spaces for working, sharing and interacting which support informal and opportunistic collaboration in distributed groups (or teams).

Game jams are inherently game design centric collaborations, therefore "playfulness and gamefulness" [13] are desirable qualities in the spaces for which jams may take place. Drake [10] develops the idea that place is inherently influential, noting that the creative fields of art, design and music source ideas from place remarking how spatial theory supports the idea that particular places promote creativity. Drake also argues that 'clusters' of creative enterprises will generate a 'creative atmosphere' in the spaces they exist and practice, building on the importance of the notion of places as influential, sources of ideas [10].

A typical game jam is an organised event with opportunities for the participants to self-form into democratic communities of practice. This is promoted by organisers of the GGJ, who make their collaborative community intention very clear within their FAQ where they advise "Do not come to the Jam with a team. Everyone will have some time to think and pitch an idea. Collaborate with new friends or peers you admire" [12]. To enable the formation of democratic communities Heath [16] highlights the importance of facilitating community focussed creative practices that generate new ideas, are grounded in diversity, encourage critique and support power sharing and decision making. These core ideals align with the general ethos of game jams and could be utilised by facilitators to organise democratic jams that prove enjoyable to all participants [6].

4. JAMS AS IMPROVISED PERFORMANCES

Improvisation is a core factor in a game jam because of unpredictable variables and resources that are available. A clue to the nature of the improvisational essence of a game jam resides in the origins of the moniker. The colloquial term 'game jam' borrows from its musical counterpart 'jam session' and uses of the term 'jam' or 'hack' in the contemporary creative sectors are certainly not new [3]. Carlsson et al [6] confirm that "approaches such as these have been used in the IT sector over the past decades..." The term jam is also applied informally to describe the process of collaborative engagement between people over a defined time (or session). This is not a technical definition and it remains flexible to suit the scenarios under which it is implemented - 'Jam session', 'Def-Jam', 'Game Hack', and of course, of particular interest to this paper, 'Game Jam'.

The expression 'jam' is derived from musical contexts, where a group of musicians playing different instruments are normally expected to collaborate for creative purposes. There are no expectations in terms of behaviours within or outputs from these events. However, there are some necessary structural norms such as how the performance groups and participants are configured, the order of performance, and the arrangement of instruments. Additional factors that will affect the jam and shape its outcome include "physical space, kinds of communication between participants, and musicians' musical skills" [28].

Creative improvisation can also be found in other fields, in the 1950's Beckett used improvisation in theatre to help enhance performance [14]. Also, influential studio 'The Factory' owned by Pop Artist Andy Warhol provided space in which creatives from a multitude of disciplines could meet for art-making and performance. Warhol recognised "the significance of the social

spaces in which these industries and creative people interacted", harmonising cultural production with the social context.

Game jams have typically been conservative and limited in terms of the variety of social interactions that they provide, and could perhaps look to be more provocative. The challenging of established social conventions is a core part of artistic movements, and this may provide context in which the potential of a game jam as an artwork can be explored.

5. PARTICIPATION AND SOCIAL INTERACTION AS ARTWORK

Kester [20] proposes that conditions and situations of objects should be disregarded and instead a focus should be shifted to artistic modes where "aesthetic experience can challenge conventional perceptions…and systems of knowledge." His proposition relates directly to the concept of the artist as "context provider" who creates artworks which are the design of spaces or processes to orchestrate situations within which aesthetic experience can occur for participants.

The concept of social interaction and participation as a work of art is not new. The roots of participative or process driven art can be traced to the Dada movement, a tradition which is extended through the practices of Black Mountain College, Fluxus, Action Art and Relational Aesthetics [2,3]. Dada focussed upon artistic process and aimed to replace traditional values in art with a new form of art, motivated by political unrest and societal conformation [22]. Artists such as Duchamp disrupted conventional practices of the artist in his Readymades where he removed the creator from production of art and instead embracing chance in the creation of artwork [25]. Duchamp's declaration of a found object as a work of art forces the viewer to reconsider the meaning of the object within an artistic context, forming "new thought[s]" about the object as an artwork [35]. Everyday objects were used by artists to challenge concepts of 'the artistic' and in turn the boundary between art and everyday life [21]. Brecht the founder of Fluxus, extended this concept, inviting the audience or curator to participate in the reconfiguration of his "arrangements" and in time, to move away from creating the work himself into instead publishing instructions for the audience to create the artwork themselves [21].

Kaprow's Happenings invited the viewer to be an active participant within the creation and shaping of the artwork [20] where the "production and reception aesthetics coincide, and the work is conceived as an event experienced jointly by the artist and the audience" [21]. Kaprow believed that happenings are "designed for a brief life, they can never be overexposed; they are dead, quite literally every time they happen" [19]. The Happening takes place only once, without rehearsal and "all that may be left is the value to oneself" as the nature of a Happening means that there is no audience to witness the performance; instead the 'audience' actively creates the artwork [19,32].

For the proposition of a game jam as an artwork, there is clearly a blurring between 'everyday' practices of commercial industry practice and the events over the course of a game jam. However, Kwasek [21] believes "It is perceived as a provocative violation of the boundary between art and everyday life only when it empathically challenges conventional standards of behaviour or acknowledged systems of reference." Therefore, it may be necessary to evaluate the potential for game jams to challenge such standards in order to be recognised as artworks in this context.

Game jams demonstrate an inherent complexity in terms of identifying and understanding the boundaries between artist, author, facilitator and audience. Conversely, across the spectrum of conventional commercial game development there is a relatively clear divide between creator/artist and audience, whereby the game development team creates a game experience (perhaps involving the target audience to a small extent in focus group testing) to completion with little direct participation from the audience. Game jams challenge and relegate the notion of audience to instead focus on elevating a group of creators who come together to produce work around a set theme or design constraints. These creators can be viewed as participants in the sense of post-modern art, as they do not define the themes or constraints (i.e. the creative vision) for the event, instead this is a construct predefined by the facilitators of the jam. In this sense, the 'artist' in a game jam could be argued to be the host who provides space, promotes a culture of practice and provokes creativity, improvisation, interaction and collaboration to bring the artwork to fruition. The emergent social interactions and participative elements of the game jam itself, in this way can therefore be defined and framed as a temporal, performative artwork.

6. DEVELOPMENT CULTURES

In order to examine the proposition of game jams as a performative form of artwork the 'Development Cultures' project was treated as a case study. Development Cultures was a six-month long collaborative project which brought together industry practitioners, academics and students from the field of video games to share practice, develop relationships and stimulate discussion around the process, purpose and potential of experimental game design. Using the above discussion as a framework, Development Cultures was analysed with a view to understanding the processes and interactions that can take place over a series of events, rather than focusing on one distinct set of interactions. It is hoped that this analysis of a developing community of practice may reveal how game jams can be designed to be disruptive processes, and facilitate an understanding of how game jams might be interpreted as creative artefacts.

This case study is informed by observations of participants, interviews with participants during and after the events, social media commentary by the participants, and the results of a reflective questionnaire sent to participants six months after the project finished. Using data from the event and qualitative data from the participants allows for a rounded and reflective analysis of the project.

Prior to each game jam event, participants were brought together in informal workshops to discuss creative intent, motivation and development processes. These workshops allowed the group to form relationships, develop their understanding of working practices across the community and to identify themes and conventions within the group. These events helped to shape the creative direction of the community and underpinned the design processes behind the creative constraints, themes and focus of the jam events themselves. Through dialogue with the community, the facilitators were better positioned to identify potentials to disrupt process and thinking within the jam artworks to trigger improvisation, creativity and innovation.

Figure 1. The Analogue to Digital Jam produced eight prototypes, including: (left to right) A rowing simulator using a cardboard tube and reconfigured floppy disk as an action button, a gardening simulator which utilised a spray bottle and physical garden to navigate the digital realm and a reconfigured bookshelf where players had to use colour coded and competitive button presses to drive their digital characters in an onscreen race.

6.1 Analogue to Digital Jam

Analogue to Digital, took the form of a five hour long game jam and asked participants to question their preconceptions about interaction, and in particular, input devices. Participants were required to utilise everyday objects as input devices for games in order to form new ways for a player to interact with the digital realm. The disruption of the use of conventional inputs such as keyboard or controller aimed to inspire improvisation in interaction design and development processes. This workshop like Duchamp's Readymades and Brecht's Arrangements, requires the creator to reinterpret everyday objects and to negotiate new meaning within that object to facilitate the creation of an artwork (game). Furthermore, through the presentation of these objects in a gaming context, the player will be required to re-evaluate the potential of the object and its purpose, disrupting their preconceptions of the game play experience opening their minds to more experimental forms of gaming.

The workshop in this way questioned game design conventions not only in terms of input devices but the possible connections between physical input and the digital realm which, for the participants, set alight the imagination and drove new ways of thinking about game development. Participants were given analogue joysticks and buttons along with a range of everyday objects to customize. One participant noted that "When you're working in a physical realm it's a whole different ball game, you're making actions and so those actions can have consequences and they can mean different things … you're sort of like, we'll try this… this sounds good but it doesn't necessarily work in its entirety." And another commenting "It's made me think about the ways games can be controlled, like the spray bottle…we kind of suggested it as a joke…and even then I thought this isn't going to work, but we plugged it in and it worked" another recognizing that "It's made us think more about different interfaces for games…anything with buttons can be made into a controller." The innovative potential of input devices and how they can shape player experience (for better or worse) was a clear outcome of the jam process, clearly, for the participants, all objects became live with possibilities.

To host this workshop, twenty three participants were invited to new workshop space, which none of the participants had previously visited. Many of the participants had professional and academic relationships to the venue within which the majority of the workshop events were held. This meant that they had pre-conceived notions of the conventions of these spaces and the behaviours expected within them [39]. In order to disrupt preconceptions of space and in turn possibly motivate new behaviours and innovation, the workshop was hosted externally and was facilitated by new members of the community. Expansion of the development community sought to disrupt developing conventions and motivate creative endeavour. The change in space and the addition of designed constraints aimed to help individuals to realize new ideas and expand their approach to game development. When asked to reflect upon the project as a whole, fifty percent of respondents referenced this jam as the highlight of their experience, noting, amongst others, that "The Analogue to Digital Jam was in particular stand-out, it was the first time most of us (myself included) have worked with custom controllers and it really opened my eyes to a whole other world of game development" and "I didn't realise how easy or cheap it was to wire up some arcade controls and make your own custom controllers, that was a very interesting development for me, and I'd like to try some more experimental design featuring unique hardware because of that." The designed constraints of utilizing analogue controls and thinking about the input device in novel ways clearly impacted positively on the processes and ways of thinking of these participants. The disruption of development space to inspire new behaviours may have impacted positively also on the outcomes, however, further study is required to draw clear conclusions on this matter.

It could be argued that the disruption of input devices, of development space and of development processes reframed participants understanding of conventional processes and approaches, which to some extent addresses Kwasek's suggestion that conventions must be challenged in order to be an experience which blur boundaries between art and everyday life [21]. A case could be made for the jam itself as an artwork or as a Happening, however, within this context the audience was absent and therefore, the extent to which the processes and approaches which emerged from this event benefitted the final outcomes and experiences of the player requires further consideration.

6.2 Jump Jam

The final event of the workshop series was a two day twelve hour game jam where industry professionals, academics and students formed teams to create experimental games, focussing upon a ubiquitous mechanic within computer games, the Jump. Again for this workshop, new participants were invited to join the

Figure 2: Screenshots from games produced at the jam from left to right: "Jump Star" a four player co-operative stacking game; "The Boy who Couldn't" a Leap Motion game where players have to bounce the character to avoid obstacles; "Castle Freak" a scaring game which uses the player's voice as an input; "Accelerunner", a four player running simulator; "Phoenix Down", a three player tower climbing game on a real tower.

community, with forty six participants in total taking part. This larger event was curated to ensure a proportionate mix of independent developers, students and academics to broaden collaboration and knowledge exchange.

Often, game jams keep the theme of the event a closely guarded secret [12,18,36,38] in order to build anticipation and ensure every participant has the same experience [12]. The Jump Jam on the other hand promoted the theme of the jam beforehand, to allow individuals to consider creative possibilities prior to their arrival at the event. One participant noted this "allowed us to collaborate and share ideas in advance, building an atmosphere in groups and on social media before the jam began." The focus on a very specific mechanic was very well received by the participants, with many noting a shift in process which "made us fundamentally reconsider basic assumptions and approach the idea from an increasingly narratological standpoint to complement the predetermined mechanic" or that "instead of throwing together a lot of disconnected ideas/mechanics you're forced to make this one mechanic really rich and engaging." For some the focus on a specific and often overlooked aspect of game design disrupted thinking, enhanced processes and fostered creativity to some extent. On the other hand, one participant noted that the focus on " a mechanic rather than an abstract idea or notion...resulted in a more directed exploration of a particular range of genres, and could perhaps discourage people from taking a more free-form approach."

Trends are evident in the outcomes of the jam, with five of the twelve final games utilising multi-player design, four of which relied upon competition to motivate play. In terms of genre, of the twelve, eight are possible to classify with four platform style games, two endless runner style games, a further two exploring sports. The constraints applied to participant activity in terms of the theme may have led to these trends, however, innovation and subversion of conventions is evident elsewhere. Fifty percent of the final prototypes used novel forms of interaction (i.e. player movement, analogue input devices or sound as an input) or unconventional modes of presentation (i.e. multi-sided projection to create physical dimensions for the digital world). It could be said that the designed constraint to focus upon one core mechanic freed the participants from complexities of game design and allowed creativity to be applied elsewhere in their development processes. This is supported by feedback from another of the participants who believes "In my experience great game design comes when you have a game up and running, when you can see/play it and begin to explore, iterate and think deeply about the kind of experience you're trying to create. This of course takes a lot of time. So it's rare to be able to do any of this in a game jam...The rare cases when you do actually have the time to iterate is when you've got a really simple idea that involves a small number of mechanics. And that's exactly the kind of game you were required to make at the Jump Jam."

The jump jam was designed to not only allow for experimentation and improvisation but also to facilitate community development, thus, the schedule was designed to include a number of social events including an introductory meet and greet, a social mixing event after the first evening and an arcade and awards event at the end of the jam. Across teams, community development occurred informally in discussions during breaks, in social events or online via social media. One participant noted that the nature of working closely in the same environment "breeds a camaraderie between everyone taking part. Everyone is under the same restrictions, and everyone is testing the boundaries as best they can. It creates an atmosphere where sharing ideas, content, technology is the done-thing. This is a stark contrast to the traditional world of game development." Time constraints are typically associated with game jams, however, the inclusion of social activity as a core event in the project may have further facilitated development of relationships. Another participant suggests that such community of practice often develops within jams with "people willing to help other teams as needed by producing assets or helping to solve problems. It's often a learning experience rather than a competition, with people specifically experimenting with new technologies or ideas." Social media was used for sharing ideas, issues and group problem solving (using the hashtag #AGLJam). Social media also supports documentation of process and outcomes, with many participants posting final prototypes online, or creating articles and image archives [1,17]. Social media serves an important role in documentation and sharing of experience to the game development community beyond those participating in the event itself.

6.3 Reflections on Development Cultures

Game Jams offer a safe space for experimentation and improvisation, beyond that which can typically be supported within commercial game development. The conditions of game jams in general promote experimentation through their compression of development times and focus on themes around development. For participants this means (as one participant notes) "you don't have time to aim for perfection but rather aim for something you'll have fun making. This helps you stop dwelling on possibilities and start creating and it arguably promotes a more organic, less controlled process." Game jams

clearly benefit creativity through improvisation and experimentation: they disrupt normal working processes and encourage imagination and innovation through intense periods of development which focus on specific elements of game design.

When designing an event, curation of the community can have positive and negative outcomes. Curation can ensure a proportionate mix of developers with differing levels of experience and can shape behaviours and interactions within the community. However, game jams at present are democratic with places being allocated on a first come, first served basis. This approach ensures accessibility, but the random groupings can limit potential as it does not guarantee diversity in levels of experience or creative approaches. Development Cultures curated participation as an academic exercise to support the mix of practical and philosophical discussion required across the workshop series. Controversy surrounded this decision on social media with a number of individuals raising issue with a lack of awareness or invitation to the events.

It has been suggested that game jams aim to simulate industry practice and can be beneficial to participants in developing skills and abilities [37]. However, as one participant from the Development Cultures project proposes "Although jams encourage you to work more dynamically and rapidly than you normally would, there are some fundamentals in terms of making decisions as a group and ensuring that everyone can contribute that simply can't be ignored even in a "fun" or dynamic environment. I believe I learnt that effective jamming is actually a skill that you need to build up experience in, as with any other development methodology." In this way, the game jam could be said to have its own working practices, modes of expression and potential, which are separate to industry practice. Game jams have the potential to develop interpersonal and technical skills of the individual, but the different modes of practice, lack of commercial focus and playful designed constraints make them a practice in their own right, independent to the needs of industry.

The recognition of game jams as their own mode of expression, as temporal artwork in their design and in their participation can in fact benefit commercial game development as one participant notes: "It encourages taking risks that would be impossible in a business environment…the opportunity to try stuff out, and more importantly the opportunity to fail without reproach is what made the jump jam, and game jams in general so special. It has coloured how we approach our development process in our office, where we are working to make more room in the schedule to try things out, and not be concerned if an idea doesn't work out. Failure is still a valid outcome, it verifies that another idea is good, or that there is more work to be done."

7. CONCLUSION

Development Cultures offers insight into the potential for game jams themselves to be seen as an artwork by evaluating the design of events to enhance community, share practice and disrupt process to lead to innovation and creativity. Development Cultures engaged with industry stakeholders ranging from independent developers to more established companies inviting them to collaborate with students, academics and industry peers in order to expand practice and understanding of the field of game development. Development Cultures began as an academic undertaking to create a community of practice and through this community, understand the potential for knowledge exchange and the study of experimental game development processes. However, through design of events and dialogue with participants, it is clear that the game jam can offer value beyond the extension of industry practice.

Game jams foster a new kind of practice which requires participants to apply fast thinking, flexibility and innovation in compressed development periods. Collaboration and camaraderie across teams working in the same space fuels a sense of community within each event and continuous participation across a series of events allows this community to grow. The jam itself does encourage new forms of professional practice in attendees, which can be recognised as a discrete output in itself. Furthermore, in designing a jam, facilitators should consider the structures they apply in terms of themes and constraints to foster creativity; the role of development spaces and the behaviours they enable; and how time and scheduling can be manipulated to encourage dialogue and social activity to further develop communities of practice. Curation of attendees can also help to diversify levels of experience and possibly shape behaviour, however, the impact of this aspect upon the experiences of the community and process of the jam is an avenue for future research. The role of the audience or player in the creation of works could also benefit from further exploration as this project was not able to include the player as active participant in development.

In studying Development Cultures, it is proposed that the host or facilitator of the workshop series is the artist, as they define the constraints within which a community of practice improvises, experiments and collaborates to create their own artwork. Without the facilitator, these events and in turn the outcomes of the events (the game prototypes and the participants' learning) would not have occurred, and thus the game jam host can be seen as an artist and the process of participating in an event is the artwork itself. In Development Cultures every member of the community was invited to reconfigure their pre-conceptions of process, output and the player through a series of creative events. The work of Fluxus and Dada were motivated by more political and social means than the Development Cultures project, however, they share similarities in terms of reconfiguration of conventions and preconceptions. In this way, the project presents some challenges to the design and facilitation of game jams as a provocation of conventions.

Game Jams have the potential to disrupt game development processes, to foster innovation through improvisation and enhance practice and the potential of games as a cultural artefact. The game jam is a temporal artwork and like Kaprow's Happenings, only exist for the duration of the activity with the production and reception of outcomes somewhat indistinguishable within the space and time of the jam. It is not until after the jam has occurred, the artwork complete, that its remains, the prototype games can be fully appreciated by both the creators and by the players. By recognising the social interaction of participants within game jams as an artistic outcome, the facilitator can design spaces and constraints which breed innovation and creativity through disruption of conventions, thus challenging pre-conceptions to create new behaviours in participants.

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Statement of Co-Authorship: Creative Communities: Shaping Process through Performance and Play

Parker, L. and Galloway, D. (2016) Creative Communities: Shaping Process through Performance and Play. Proceedings of the First International Joint Conference of DiGRA and FDG, August 1-6 2016, Dundee. http://www.digra.org/wp-content/uploads/digital-library/paper_103.pdf

This paper presented the findings of funded research activity undertaken as part of Development Cultures and Connecting Performance and Play. As co-author, I provided content to the literature review, and as co-organiser of the two events I contributed an overall contextual understanding of the activities that emerged.

As lead-author on this paper, Lynn Parker made a significant and meaningful contribution through the overall design of the research, developing the use of play as a method to unlock creativity and innovation within a community of practice, and through undertaking analysis and evaluation of communities of practice and the value of play. Lynn designed and proposed the paper's key contribution to knowledge, in "the context providers' toolkit". This design framework is the outcome of interviews, case-studies and participant observation – all activities led and undertaken by Lynn.

This paper has since been updated and has been accepted to be published in DiGRA's flagship journal - Transactions of the Digital Games Research Association (ToDiGRA) in July/August 2017. This peer-reviewed journal is developed using the best submissions from DiGRA conferences, therefore to be invited to submit is a significant achievement.

Yours sincerely

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Creative Communities: Shaping Process through Performance and Play

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ABSTRACT
This paper studies the use of play as a method to unlock creativity and innovation within a community of practice (a group of individuals who share a common interest and who see value in interaction to enhance their understanding). An analysis of communities of practice and the value of play informs evaluation of two case studies exploring the development of communities of practice, one within the discipline of videogames and one which bridges performing arts and videogames. The case studies provide qualitative data from which the potential of play as a method to inspire creativity and support the development of a potential community of practice is recognised. Establishing trust, disruption of process through play and reflection are key steps proposed in a 'context provider's framework' for individuals or organisations to utilise in the design of activities to support creative process and innovation within a potential community of practice.

Keywords
Videogames, communities of practice, collaboration, play, performance, design process.

INTRODUCTION
Videogames and the performing arts are intrinsically linked by the notion of play. Flanagan (2009) identifies the performative nature of games, whereby a "negotiation of action" is required for play. Conversely, play is identifiable in the constructs of performance, where imagination, improvisation and physical expression make up a significant part of an actor, or indeed player's repertoire. The medium of videogames has selectively drawn from the cultural practices of film, music, dance and theatre, with clear parallels existing between the construction of game environments and set design or interactive art installations. In each instance a context for an experience is established, with forethought into how the audience can perceive, navigate and infer meaning from both the physical space and the action that is staged within it. Against this context, there are important questions about how best to share methods and experience across different communities of creative practice, and how such collaborative approaches might purposefully support the creation of innovative creative works across a range of artistic disciplines.

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The context of this research is characterised by the emergence of digital gaming as a cultural form that has grown from technological roots into the dominant entertainment form of the 21st Century. As this medium continues to develop one can observe an increasing diversification and segmentation of audience and players as it seeks to find new modes to engage more sophisticated audiences and create meaningful experiences (Crecente 2014, Jenkins 2005). Parallel developments have seen the adoption of game-like practices in site-specific theatre and are concurrent with the growth in popularity of location-based gaming (Dixon 2007, Kwastek 2013, Wood 2011).

Collaboration across disciplines is central to the creation of such digital mediated experiences and issues with working across discipline boundaries have been the focus of much academic enquiry within the creative industries (O'Grady 2011, Shyba 2007). Economic growth and policy formation have also been a focus of studies into the creative industries and the recognition and support of creative clusters (Ball 2014, Chapain et al 2010, Creative Scotland 2014). The formation and development of a collaboration itself has however, been less of a focus of academic research. This paper seeks to explore the process of developing creative communities, underpinned by the concepts of communities of practice, and proposes that play can be utilised as a method to foster and evolve creativity and innovation within communities of practice and across discipline related boundaries. Within the context of this paper, a community of practice is defined as a group which is formed due to shared interest, but that develops into a culture of creativity, with a shared language, and shared basic assumptions that lead to the creation of knowledge and meaning (Wenger 1998).

To explore the evolution of creative communities, firstly a foundation for understanding culture and communities of practice is formed and the value of play is explored in relation to creative potential. Existing initiatives within creative communities such as the creative hub are examined to understand the use of play to trigger creative potential through disruption of conventions. This underpins case study analysis of two examples of the development of communities of practice; one within the field of videogames, and one that bridges performing arts and videogames. The case study experiences provide qualitative data from which play as a method for developing a community of practice and unlocking creativity is examined. The contribution of this paper is the proposition of a theoretical framework for use in the conception and design of events which aim to harness potential within communities of practice through enhancement (and reinvigoration) of creative process to enable innovation in the creation of digitally mediated art and the emergence of novel outcomes.

CULTURE AND COMMUNITIES OF PRACTICE

Salen and Zimmerman (2004) present a common understanding of culture as the collective ideals, traditions and knowledge possessed by a group or society. Through examination of multiple definitions of culture, they identify three key elements – "what people think, what they do, and the material products they produce" (p.508) Schein (2010) proposes that a group's culture can be explored at three levels and that the core assumptions that exist across a group play a significant role in the formation and adoption of specific beliefs and values, which in turn influence observable factors such as behaviour, structures and processes. Schein further asserts that a group can form dependencies on these underlying assumptions to maintain a solid grounding and a collective understanding of purpose. Challenging these assumptions and propositioning for change can provoke negative or defensive reactions, anxiety, and disengagement, all of which are counter-productive to the development of a creative community.

The assumptions that are prevalent within a culture can present limitations on conceptualisation and production process whereby initially successful ideals and methods of working become accepted as normal or best practice, and remain unchallenged. Such an occurrence can lead to the formation of collectively perceived constraints that diminish a team's ability to identify and explore alternative or innovative solutions. A process proposed by Norman (1998) identifies and embraces constraints, and pairs them with affordances to provide support for using unfamiliar objects or being in unfamiliar situations, whereby "affordances suggest the range of possibilities, constraints limit the number of alternatives" (p82). Norman classifies constraints into four distinct classes:

- Physical – limitations defined by space, size, and shape
- Semantic – limitations defined by meaning and purpose
- Cultural – limitations defined by acceptable behaviour and societal conventions
- Logical – limitations defined by natural connections and the logic of relationships.

These classifications of constraints have the potential to be broadly applied as a tool to analyse and deconstruct the development processes of creative teams and communities. For example, a game designer is confronted by all four of these classes when designing a game around a particular controller or input device. The process undertaken and the solutions established by the designer are shaped by the physical construction and size of the controller, its purpose as a handheld device, the culturally acceptable function of each trigger, and the logical and instinctive mappings of the directional buttons. The designer is operating within the context of a domain of knowledge, a concept that Csikszentmihalyi (1996) suggests is constituted of a particular set of methods, systems, rules and symbolic representation. When the rules of a domain are understood, a transformative and empowering experience can emerge that "expands the limitations of individuality and enlarges our sensitivity and ability to relate to the world." (p. 37) The process of learning the skills and procedures of an additional domain can be a challenging activity requiring practice and commitment, and can be positively and negatively influenced by factors such as interventions from external bodies or the structure and accessibility of the knowledge.

The concept of a domain has also been adopted to describe the three core characteristics of a community of practice. According to Wenger et al. (2002) the domain establishes the identity of a community through knowledge, purpose, and meaning; that community exists as the social connections and relationships that supportively facilitate learning; and practice is the activities and items that the community undertakes, shares, and creates.

Communities of practice can exist in three states: Potential, active and latent (Wenger 1998). Potential communities are "possible communities among people who are related somehow, and who would gain from sharing and developing a practice together." (p. 228) Active communities are at work, effectively negotiating participation and forming their own domain specific history, whilst latent communities are those which no longer exist but inform and feed into the practice, language, knowledge, and history of each of its former members. In understanding the make-up of a community of practice it is also important to note that they "are about content – about learning as a living experience of negotiating meaning – not about form." (Wenger 1998, p.228)

It is not possible to design a community of practice or to use these concepts as a device to bring individuals together. Instead the community must already exist in one of the three possible states and can only be "recognised, supported, encouraged and nurtured" by external forces (Wenger 1998, p. 228). Pearce (2011) adopts the term "communities of play" to intentionally challenge the implied meaning that has been established with communities of practice. Pearce asserts that play can be described as a form of practice but, with regard to the formation and activities of communities, play is a larger concept that deserves to be understood and interpreted in a context of its own.

THE VALUE OF PLAY AND CREATIVITY

Kline, Dyer-Witheford & De Peuter (2003) identify the positive contribution that play can provide in the contexts of learning and formal education, recognising that "different forms of play permit varying degrees of creativity and experimentation, as well as some questioning of social roles." (p. 244) The work of Caillois (1961) provides an exhaustive and robust classification of the different forms of play, categorising activities across four key concepts: agôn as competition and challenge, alea as chance, mimicry as role-playing and simulation, and ilinx as physical sensation and disorientation. These categorisations are further distinguished through Caillois' definition and application of paida and ludus, or unstructured and structured play.

Through the deconstruction of a century of play theories, Sutton-Smith (2009) contends that play is a varied and ambiguous concept that has been appropriated by different academic disciplines and analysed with a narrow focus or bias, that struggles to accurately represent the intangible qualities of play. Much of the work undertaken by theorists and sociologists exploring the concept of play is founded upon the concepts and theories proposed by Huizinga (1949) who states that play pre-dates culture and is an activity that was not created by man. Huizinga argues that there is a close connection and purity of play within the arts of music, poetry, and dance, which is partly driven by the fact that they are usually bound to performance as opposed to being bound to objects, labour, and matter, as can be recognised in the "plastic arts" of architecture, sculpture, painting and ceramics. Huizinga stresses the importance of the relationship between play and the creation of objects "if therefore the play-element is to all appearances lacking in the execution of a work of plastic art, in the contemplation and enjoyment of it there is no scope for it whatever." (p. 166)

Across other fields, play has been defined and interpreted as a wasteful or unproductive activity. McClelland (2007) explores the relationship of play and sport in a global context, arguing that play is a ludic activity that is wasteful of time, and that work is a serious activity that is productive in terms of time. This view, although clearly open to dispute, can be recognised as the type of assertion that can be misinterpreted, further compounding the issue that reduces society's ability to objectively view play as a productive and essential part of the creative process. Play and the state of being playful are crucial elements in the creation of games, which Fullerton (2014) expresses "is a challenging task, one that requires a playful approach but a systemic solution." (p. 2) This indicates that there are moments within the design and development process that are more suited to either exploring playful methods or using play as a tool to drive production or enable creativity. Landry and Bianchini (1995) discuss creativity as a concept that has often been defined as being a feature of personality or a characteristic that is developed in an individual as part of their collective learning or lived experience. However, they claim that "genuine creativity involves thinking a problem afresh and from first principles; experimentation; originality, the capacity to rewrite rules; to be unconventional; to

discover common threads amid the seemingly disparate; to look at situations laterally and with flexibility. These ways of thinking encourage innovation and generate new possibilities…emphasising the new, progress and continual change." (p. 18) The qualities and values proposed in this statement can be oriented with modernism which challenged traditional ideals and embraced experimentation and exploration of process. Kester (2004) discusses such creative acts or interventions as being a key legacy of modernism whereby the conditions and situations of objects are disregarded with instead a focus on the methods in which "aesthetic experience can challenge conventional perceptions…and systems of knowledge." (p. 3)

SPACES TO PLAY: CREATIVE HUBS, COLLECTIVES AND LANDSCAPE OF PRACTICE

Crogan (2014) highlights how creative economy initiatives often fail to address or indeed include creativity as a core element, instead promoting models whereby the true emphasis rests on economic, legal, and infrastructural conditions that downplay the potential generation of cultural value. In response to such strategic oversights, Crogan identifies the potential role of creative hubs as a vehicle to facilitate creativity and play in the establishment and development of communities, and to drive innovation within the creative industries. Like communities of practice, creative hubs develop where there is a recognised shared interest or potential and thus the landscape is fragmented internationally. The creative hub exists in many forms, from Government led initiatives such as National Film Board of Canada (ONF-NFB, 2016), to large scale commercial initiatives such as MediaCity in the UK (Ball 2014), private and academically supported incubators for entrepreneurship such as Chicago's Entrepreneurial Hub for Digital Start Ups 1871 (1871 2016) through to independent arts collectives and collaborative workspaces including Watershed in the UK (Watershed 2015), Bento Miso in Canada (Gamma Space Collaborative Studio, 2016) and Play, Collaborative Arts Venue in Los Angeles, USA (Play Collaborative Arts 2016). Arts collectives and collaborative work spaces, like creative hubs, are self-organised creative communities. However, these are usually driven by artistic, social or political intent with less economic motivation and thus can aim to be more experimental and disrupt "existing aesthetic formulas" through their practice (Cotter 2016).

Creative hubs, much like communities of practice, require a pool of talent to support creativity and embed creative practice for future generations (Ball 2014). Creative Industries tend to grow in clusters across the UK and the development of areas with complementary skills (commercial, creative and academic) can develop strong network for creative and economic growth (Capain et al 2010). Universities are recognised as a source of emerging talent to fuel and support creative industries, and creative hubs often reference the cluster of commercial, academic, and creative skills as the core to their success (Ball 2014, Wright 2015). However, it is important that the role of universities can be recognised as extending beyond the development of talent and towards innovation, as the knowledge within research and academic staff can provide a disruptive element that questions practice and diversifies the collective environment for undertaking challenging, creative work. Creative hubs and universities can act as "context providers" for communities of practice (Kester 2004). The context provider focusses on process and the creation of spaces within which conversation and participation can lead to the generation of innovation and creativity. In relation to this paper, the context provider could be seen as a facilitator who designs spaces and interventions within which a community of practice can flourish.

Communities of practice can harness the potential within a creative hub to form an ecosystem that is held together by a collective sense of value, trust and the possession of abilities to resolve conflict. Process is central to the creation of such an ecosystem and must develop intuitively from inside the community itself (Wenger 1998). Communities of practice often exist without such facilitation or support. However, it could be argued that within existing communities of practice - for example, small scale videogame development - the ecosystem is polluted by an oversaturation of developers reproducing existing styles, structures, and mechanics of previously successful genres. Similarly the tools of game development compound this and can be identified as promoting a bias and dictating a specific way of working, conceptualising, and distributing games. Game engines, the software many developers use to build their games, have a distinct look and feel which can also result in an unintentional, generic look and feel across a spectrum of small, independent productions.

Such outcomes could be viewed as the stagnation of a community of practice. Support by a facilitator could help to disrupt process and inspire new processes within a community. For example, the application of constraints, such as proposed by Norman (1998) could be used to design activities to challenge a community's existing processes. Stokes (2005, p.7) believes constraints upon creativity are "barriers that lead to breakthroughs" and can promote novel responses within constrained creativity. Laurel (2014, p.130) supports this view: "Limitations…paradoxically increase one's imaginative power by reducing the number of open possibilities." A context provider could support innovation through playful application of constraints to trigger innovation. However, challenging existing meaning within a community can be a volatile process, and context providers must recognise that "learning cannot be designed. Ultimately, it belongs to the realm of experience and practice. It follows the negotiation of meaning; it moves on its own terms." (Wenger 1998).

Disruption could also occur by traversing the landscape of practice to collaborate across disciplinary boundaries (Hutchinson et al 2015). The collaboration of individuals from different disciplinary backgrounds can lead to innovation and creativity within and across disciplines. This process can present issues, as each individual draws from the history of their field of practice which "creates a boundary with those who do not share this history" (Wenger-Trayner 2015). Therefore, terminology, interpretation, and perspectives are coloured by the background and experience of the individual. There is potential for cross boundary playful experimentation to address issues of varying histories and perhaps to progress into the development of new shared assumptions upon which innovation could be based. However, the communities coming together at a boundary upon the landscape of practice must recognise the value in the perspectives of the other disciplines and that the knowledge present within each community may or may not be compatible.

METHODS

In order to examine the feasibility of play as a method for the development of a community of practice and for fostering innovation within creative practice, two case studies will be presented. Each case study will examine the potential community and will evaluate the use of play as a method to aid the development of shared language, and more specifically to explore the use of designed constraints within structured play as a motivator of creativity and innovation. Each case study took the form of a workshop series and uses qualitative data gathered through open observation of participants within the workshops. The first, Development Cultures, was a six-month workshop series that brought together practitioners, academics and students within the discipline of

videogames. The second case study, Performance and Play was a weeklong intensive workshop that brought practitioners and academics from the performing arts and videogames together to explore the application of practice and process across disciplinary boundaries.

CASE STUDY ONE: DEVELOPMENT CULTURES 2014

Development cultures was a six month long collaborative project which brought together industry practitioners and academics from the field of video games to share practice, develop relationships, and stimulate discussion around the process, purpose, and potential of experimental game design. In the design of events (Figure 1), the context providers sought to build trust, challenge assumptions, explore routes for innovation and collaboration through definition of shared intent, and promote experimentation through playful interaction. The initial workshop in April 2014 was made up of twenty three developers and academics. Over the course of the project, the participant group expanded to forty six for the final workshop in July 2014.

Two practical creation events (or jams) were preceded by reflective seminars where participants shared their personal experiences of game design and development. Jams were identified as ideal experimental vehicles for this project because game jams are known for their ability to foster creativity (Guevara-Villalobos 2011), develop new skills and relationships (Reng et al 2013), and have potential to disrupt existing practice (Locke et al 2015).

Within the reflective seminars, the group was able to begin the identification of themes across individual aspirations because all participants drew from an existing understanding of the domain. These seminars aimed to build a collective understanding of creative intent to aid the formation of a community of practice. Throughout both seminars, participants evaluated their own and others' processes and questioned conventions. Such exploration and re-definition of the collective understanding aided connections within the community and eased the introduction of new members in the later stages of the project. The impact on practice was most evident in the Analogue to Digital and Jump Jam events.

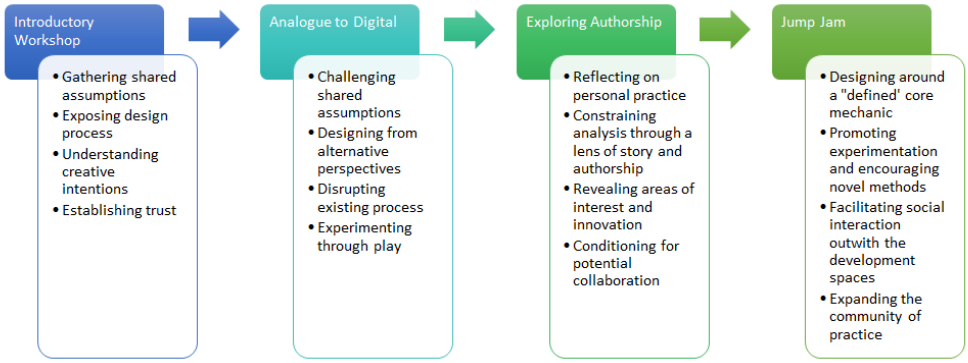

Figure 1: This figure details the goals of playful interaction within each event that aimed at each stage to support, develop and challenge innovation and creativity in a developing community of practice.

Figure 2: Photographs taken during the event of a selection of the experimental controllers and games.

Analogue to Digital: Designing from a New Perspective

The Analogue to Digital workshop aimed to disrupt thinking about interaction with a game to encourage experimentation and creativity. The event challenged participants to explore novel methods for user interaction, utilising found objects that could be re-constructed into custom input devices for games (Figure 2). Teams were tasked with devising and developing a game prototype (along with a bespoke custom controller) and were provided with analogue arcade components such as buttons, micro-switches, joysticks and wires.

Self-organisation of teams allowed for like-minded participants to group together to create work. In some cases, teams were formed by a company with no external input, which ensured ownership remained within the company whereas other teams were formed across companies and academia enabling knowledge exchange.

The five hour workshop led to the compression of typical development, design and planning phases and thus once an idea was formed, the designs were iterated upon only as challenges arose. Short time frames are a typical attribute of the game jam (Goddard et al, 2015) with many jams lasting for only 12, 24 or 48 hours. In this case, the time frame was very heavily compressed which led to further disruption of conceptual and developmental processes. The intimate and unfamiliar work space fostered an attitude of open collaboration within and across teams. The event focused upon designing from player perspective rather than for existing controllers challenging logical conventions of game development. This altered participant focus with a third of the participants claiming that they were required to foster the co-creation of new processes for design and implementation. The innovative potential of input devices and how they can shape player experience (for better or worse) was a clear outcome of the event and many of the participants expressed a wish to continue this kind of development beyond the workshop.

Experimental Game Jam: The Jump Jam

The development cultures project closed with a two day twelve hour game jam where industry professionals, academics and students formed teams to create experimental games around the theme of ‘the jump’. The theme of the jam was promoted prior to participant arrival. Typically game jams do not reveal their theme prior to arrival of participants, and one individual commented that the disruption of this tradition “allowed us to collaborate and share ideas in advance, building an atmosphere in groups and on social media before the jam began.” This event was designed to foster experimentation and facilitate community development through openness and play, thus, social events were scheduled throughout in the form of an introductory meet and greet, a social mixing event on the first evening and an awards ceremony at the end. The guest list was curated to ensure a proportionate mix of independent developers, students and academics that

expanded participation beyond the existing community of practice of the project, inviting fresh perspectives and diversity into the community. The expansion of the community was successful in terms of experience sharing and networking, however, most teams were formed by individuals with existing relationships and only one team was formed by individuals with no previous experience working together. Teams with previous experience of working together limited knowledge transfer as working practices were a known factor, however, known relationships within a group can help to the team to achieve 'group flow' which is central "to foster improvised innovation" (Sawyer 2008).

The designed inclusion of social activity into the event may have further facilitated sharing of experience and development of relationships. Across teams, community development also occurred informally during breaks, in social events or via on-line resources such as Facebook or Twitter. The use of social media was promoted, (using #AGLjam) for sharing ideas and group problem solving. Participants posted positive comments relating to the experience, development of relationships and range of creativity in prototypes (Hunt 2014). Many final prototypes have been posted online and Storify articles were created to document individual and jam wide activity (AbertayGameLab 2014, Hidden Armada 2014). The breadth of engagement with social media indicates that it serves an important role in sharing experience with the game development community beyond those directly involved in the event itself.

The game jam produced twelve game prototypes, many of which utilised technology, space, and interaction in novel ways (Figure 3). The playful structure of the game jam also influenced the future commercial activities of some of the participants. New working partnerships were formed, and the potential of new intellectual property was recognised. This is evident by the demonstration of one prototype at a major UK games consumer event (Eurogamer 2014) and the development of another into a full-scale game for commercial release on Xbox One and Steam (Jump Stars 2016).

CASE STUDY TWO: PERFORMANCE AND PLAY 2015

Performance and Play was a weeklong intensive workshop hosted by the Dundee Repertory Theatre in February 2015, which brought together creatives from performing arts and game development to explore the connections between performance and play.

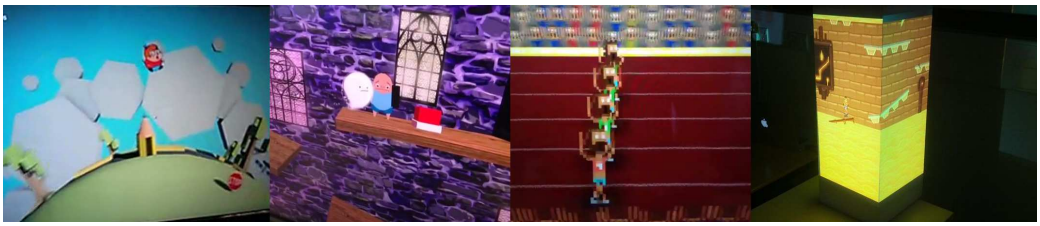

Figure 3: Screenshots from games produced at the jam from left to right: "The Boy who Couldn't" a Leap Motion game where players have to bounce the character to avoid obstacles; "Boo" a scaring game which uses the player's voice as an input; "Accelerunner", a four player running simulator; "Phoenix Down", a three player tower climbing game on a real tower.

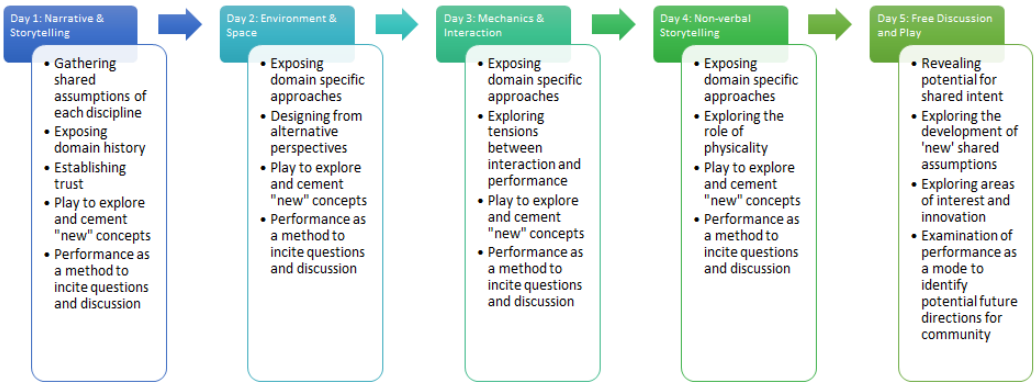

Figure 4: This figure details the goals of each day of the workshop which aimed to develop trust, a shared understanding and innovation through play in a developing community of practice.

From the performing arts participants included actors, artistic directors, creative contributors and choreographers (referred to as 'performers' for the purposes of discussion) and within the field of videogames, collaborators included artists, game designers, sound designers and academics (referred to as 'gamers' for the purposes of discussion).

This project benefitted from an intensive timeframe of development and shared intent as the event was designed due to an existing recognition by the participants of the potential benefits to their individual community of practice in working with other communities. The first day focused on developing trust by defining participants' hopes for the week and through definition of domain specific terms to form a basis of knowledge for the community. Each day of the workshop purposefully followed a predictable format; domain specific knowledge was shared and discussed each morning and each afternoon this information was used to structure playful experimentation and to incite further discussion (Figure 4).

Structured play took the form of roleplaying, simulation, and experimental collaboration within given design constraints. Participants worked in small randomly assigned groups throughout, to ensure a breadth of cross-domain interaction. Time was allocated at the end of each day to for groups to 'perform' the outcomes of their experimentation and to question, identify and explore tensions at the boundary between the communities. The format enabled knowledge transfer between groups and encouraged input from all participants to immerse each discipline within the world of the other. The final day leveraged the developing shared understanding to look forward into possible collaborations and future work through debate, discussion, and play around digitally mediated art production.

Sharing Histories

On the first day of the workshop, each participant was asked to write three hopes for the week (anonymously) and to stick them to the wall. This framed individual goals and formed a foundation for discussion. As the participants came from a range of communities of practice, it was important for introductions and discussion of intentions to

take place, to clarify goals, pre-conceptions and introduce language from each field (Wenger-Trayner 2015).

The identified hopes for the week demonstrate five key themes: the creation of work; networking to form meaningful collaborations; breaking down boundaries between communities of practice; gaining knowledge to expand personal practice; and looking for inspiration. The most prevalent of these themes was the hope that boundaries between communities of practice could be broken down. This permeates through each of the other expressed hopes for the week and seemed important to the achievement of personal agendas. “Mutual understanding of craft”, being “brave and sit[ting] with the awkward difference of practice” and “being less afraid of technology” are three of fifteen such explicit expressions from participants. These results verify that the project tapped into an existing “potential” community (Wenger-Trayner 2015), as the group expressed willingness to learn from other communities of practice with a hope to form collaborations. Discussions around interactive theatre raised a concern that interactivity might subsume theatre as a standalone practice. The workshop valued each form in its own right and aimed to explore spaces of possibility at the boundaries of each practice. The workshop’s designed time for open discussion helped the group to form a shared understanding that it may be possible to bring together interactivity and performance to form a new community of practice, which does not subsume or replace traditional approaches to theatre, dance or gaming. Time for discussion within the workshop schedule was key to the definition of such parameters.

Play and Developing Community

Play became core to the identification of issues across practices. Each afternoon, playful tasks were assigned to randomly generated groups of participants to encourage experimentation with the theme of the day. Outcomes of experimentation were performed to the entire community at the end of each session, to spark discussion and knowledge sharing. Chance played a role not only in team generation but also in many of the experimental outcomes. On the first day, one of six small groups was formed by performers only (with no gamers) due to chance formation of groupings. The designated task required the generation of an interactive narrative but the group had no previous experience of interactive narrative generation and thus utilised logical constraints and trial and error to create their performance. The final ‘playable’ performance (a playable performance is where an audience interacts with performers to shape the progression of a performance, perhaps through physical interaction or verbal direction) demonstrated innovation and creativity in the application of interactivity to a narrative structure, but the stories produced made very little narrative sense. In this case, chance allowed for novelty in creative process but the lack of knowledge of interactive design led to gaps understanding and suggests a need for diversity in groupings across communities of practice.

The application of competition and challenge within playful experimentation highlighted innovative potential. On day three, teams of two (performer and gamer) were tasked with the reinterpretation of existing board games focussing upon interaction and mechanics. The design process carried out by each team was very physical, with participants intuitively choosing to disrupt sedentary conventions of board games, challenging the physical, semantic, cultural and logical constraints of the given games through their experimental reinterpretation (Norman 1998). Some participants imagined the removal of physical constraints such as gravity upon the creation of a new game and others reinterpreted jig saws so that players had to run from one scattered piece to the next to

win the game. Participants' familiarity with the board games inspired their challenge of conventions and led to competition and challenge underpinning the design of revised versions of the games. All of the eight games designed by teams had a win state and were multiplayer, relying upon competition between players to motivate progress. The basis of play upon competition within this activity differed greatly to the forms of play within all of the other outcomes of the week, where instead, groups utilized mimicry, physical sensation, disorientation and chance. One unifying factor across all of the playable performances made during the workshop was that challenge was important, but competition less so. Instead, many of the outcomes required the player or audience member to interact and collaborate with fellow players to "solve" the performance.

In another task, play helped to uncover previously unspecified tensions between performance and games. On the final day, randomly generated teams had to create a playable performance. One team tasked the audience to move through a space, two at a time – each in their own unique play/performance space. They became active participants required to collaborate with one another to solve the puzzle of the performance. The presentation of this performance to the community identified a need for many performers within the 'play' space to create an experience for only two audience members at a time. This sparked discussions around tensions in audience roles and commercial viability in interactive performance. In games, the experience tends to be one to one where the player controls the unfolding of the interactive experience at their own pace. Within performing arts on the other hand the performer performs for a pre-defined length of time to an audience of many. The experimentation within the workshop identified a tension between the one-to-one system of games and the one-to-many system of performance. Play allowed the group to identify, question and explore the creative, conceptual, operational, and commercial issues around this tension.

Developing a New Community

Performance and Play finished with participants anonymously posting their goals for the future on a wall for discussion. This activity made it clear that a shared creative intent developed over the course of the week. None of the participants identified exploration of boundaries as a goal moving forward, but instead suggested the creative experimentation across performing arts and videogames. The responses can be organised into three categories: intent to experiment practically; intent to create work around a designed theme; and intent to create specific artwork. Fourteen specific ideas for playable performances which cross digital and physical boundaries have been proposed, a further fourteen themes have been suggested to shape experimental development, and five participants generally suggested further practical activity in the field.

CREATIVITY AND CREATIVE COMMUNITIES – A THEORETICAL FRAMEWORK

The case studies present a range of creative 'interventions' which can help the formation of a potential community of practice into an active community of practice. They suggest that structured play and designed constraints to disrupt assumptions can inspire creativity and innovation. The role of the context provider is to recognise potential communities and to support their development by creating an environment where creativity can flourish. We propose that when designing such interventions, there are four key stages that a context provider must consider in order to fully support a potential community of practice (Figure 5).

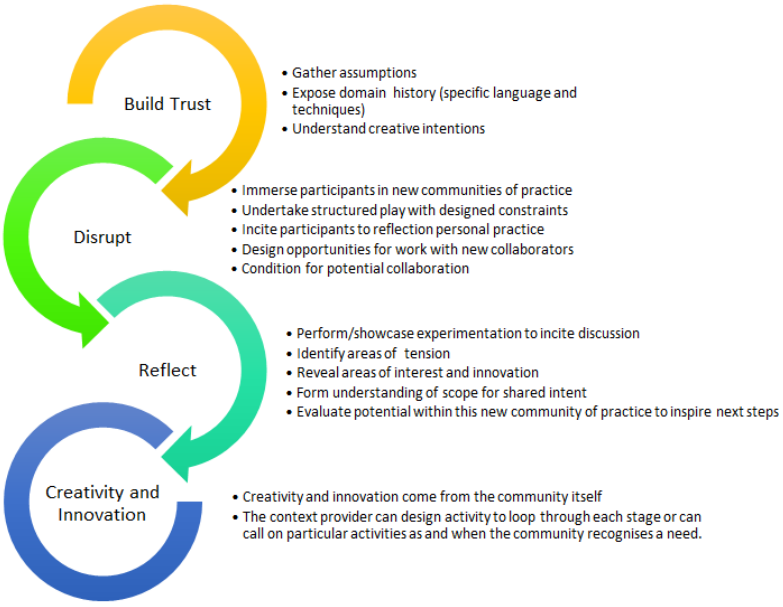

Figure 5: A framework for the context provider.

The first stage is the creation of trust within the community. All participants must find an equal footing upon to develop a new community upon, thus individual assumptions must be identified and explored as a group. Anonymity in initially presenting ideas (through posting thoughts to a wall) helps to form a basis for open discussion in a newly formed community. Once confidence within the group is developed at this early stage, it is possible to invite participant to more openly express their thoughts, experiences and perspectives. Domain specific history, terms and techniques should be defined at this stage to form a base understanding from which outcomes can develop.

Stage two requires practical experimentation to inspire creativity and then the disruption of process through structured play and constraints. The case studies suggest that new collaborations help knowledge exchange and can prepare the community for collaboration beyond experimentation. However, there is no 'perfect' way to organise new collaborations to ensure creative endeavor; within the case studies, both random assignment of teams and self-organised teams produced mixed results. The context provider must, therefore, clearly define the goals of experimentation, the design constraints and then interpret the relationships within the community to determine an appropriate group forming technique.

Stage three requires time and space for the entire community to experience and interact with experiments from stage two. The community should explore and discuss the possibilities and tensions presented by this work. Experimentation acts as a catalyst to reveal potential, form a shared understanding and inspire future work.

Stage four sees creativity and innovation emerge from inside the community. The context provider must design opportunities for the group to form their own concrete plan of action beyond the workshop events. Such plans help to motivate further interaction within the community (out with physical space) and provide targets for the group to work towards. Follow-up sessions (some months after the original series) are proposed as a

useful tool to motivate activity and ensure the experiences of small (possibly self-formed) groups within the community are shared with the entire community. This stage would lead to (or be the dissemination of learning from) large scale outcomes created by the community, representing the developed shared vision of the community.

In conclusion we propose that the framework presented within this research, relies upon a context provider as an individual or organisation that recognises the need for and designs a space to support creative endeavor within a potential community of practice. The context provider motivates or disrupts practice through the design of conditions and constraints to allow communities to question competences, shared assumptions and trigger creativity. It is not possible to design a community of practice; however, it is possible to design spaces and activities within which communities can foster innovation and creativity for themselves.

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Videogames in the Museum: Participation, possibility and play in curating meaningful visitor experiences.

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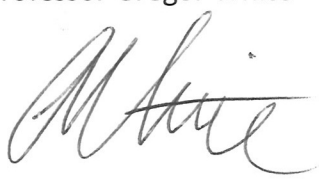
Authorship:

The paper was co-authored by Lynn Parker and I as a consequence of shared and overlapping interest in the area of public reception of videogames and the interpretation and exposition of meaning through active participation.

The paper was based in a presentation at the Association of Art Historians Conference in 2016 that presented some finding from an AHRC Research Network project in partnership with the V&A. The resulting paper moved these findings on considerably mainly due to the input from Lynn and her insights around community stake-holding in constructed meaning and active participation in meaning making.

This is a genuinely co-authored piece of work that has been accepted to a worl leading Journal in the field of media and art.

Professor Gregor White



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Playing the Museum: Participation, possibility and play in curating meaningful visitor experiences.

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Keywords

Videogames, games design, curators, museums, exhibition, agency, participation, rules, play, possibility space, co-creation, meaning-making

Heading: Abstract

In 2014 *Videogames in the Museum* [1] engaged with creative practitioners, games designers, curators and museums professionals to debate and explore the challenges of collecting and exhibiting videogames and games design. Discussions around authorship in games and games development, the transformative effect of the gallery on the cultural reception and significance of videogames led to the exploration of participatory modes and playful experiences that might more effectively expose the designer's intent and enhance the nature of our experience as visitors and players. In proposing a participatory mode for the exhibition of videogames this article suggests an approach to exhibition and event design that attempts to resolve tensions between traditions of passive consumption of curated collections and active participation in meaning making using theoretical models from games analysis and criticism and the conceit of game and museum spaces as analogous rules based environments.

Heading: Introduction

The recent rise in popularity of the collection and exhibition of videogames has seen some of the worlds' most prestigious museums and art galleries embrace the medium and recognise videogames significance as culturally, and potentially, socially critical. Museums, by their very nature as custodians of culture, history and as arbiters of taste, authenticate these properties simply by including videogames in their collections. Exhibitions such as *Game On* [2] and *Game Masters* [3] employ standard curatorial approaches using chronological progression, popular success and critical acclaim as organisational frameworks and discretionary criteria in representing the history and achievements of the videogames industry. Typically, they use a form of 'curated arcade' as the structural conceit of the exhibition. The recent Smithsonian exhibition, *The Art of Video Games* [4] notably adopts the traditional curatorial language of the museum by exhibiting the visual art and

design elements of games directly on the walls of the gallery. Strategic approaches such as these consciously appropriate the language and conventions of the museum to directly invoke the legitimising effect of the institution whilst simultaneously courting controversy through the exhibition of unashamedly populist content. On embarking on a collection of interaction design the Museum of Modern Art in New York invested in acquiring Nintendo's Pac-Man for its design collection. The exhibition of Pac-Man and 13 other games in the Museum's collection came under ferocious attack from The Guardian's art critic Jonathan Jones,

> **[BLOCK QUOTE BEGINS]**
> *The player cannot claim to impose a personal vision of life on the game, while the creator of the game has ceded that responsibility. No one "owns" the game, so there is no artist, and therefore no work of art… Chess is a great game, but even the finest chess player in the world isn't an artist... Artistry may have gone into the design of the chess pieces. But the game of chess itself is not art nor does it generate art – it is just a game."* [5]
> **[BLOCK QUOTE ENDS]**

This polemical response was typical of the criticism of the exhibition and exemplifies the outrage that is provoked when the traditions of the institution are perceived to be undermined. Videogames, like all forms of play, are essentially accessible and consensual. They rub uncomfortably against the exclusive, hierarchical bureaucracy of institutions as they seek to engage and encourage exploration and discovery. Good games share a sense of wonder, excitement and delight with players. They are an invitation to connect between the designer and the player that recognises each participant has a role in creating a meaningful experience in the same way as good art and good curatorship should. *"Games create 'possibility spaces', spaces that provide compelling problems within an overarching narrative, afford creative opportunities for dealing with problems and then respond to player choices with meaningful consequences."* [6] The challenge to the museum is to relinquish some authorial control to 'possibility', in order to become an active participant in the creation of a shared construction of meaningful experiences.

Heading: Visitor Agency and Possibility in Games

> **[BLOCK QUOTE BEGINS]**
> *"Games have a wildness, a strangeness to them and sometimes I feel like what we're doing when we talk and think and write about games as an aesthetic form is to domesticate them, to tame this wildness, explain this strangeness and hang it on our walls, display it in our parlours and museums and preserve it in our history books."* [7]
> **[BLOCK QUOTE ENDS]**

Videogames do not easily fit into models typically defined as aesthetic. Their participatory nature, social qualities and spaces of possibility make it difficult to view them as 'complete' works. When discussing games as an aesthetic form, they are often put into more manageable categories, looking to the final

artefact in much the same way as a painting or sculpture, in order to make the discussion and analysis of them more 'comfortable' [8]. Like most aesthetic objects, games are inherently participatory, however, unlike many others, videogames require direct interaction with the player shifting the role from 'passive viewer' to 'active participant' in order to reveal the true meaning of the game experience.

> **[BLOCK QUOTE BEGINS]**
> *"The space of possibility within a game is all potential, a potential realized through play. Games, when approached with artistic sensibilities, explore an aesthetics located somewhere between the conceptual and the experiential."* [9]
> **[BLOCK QUOTE ENDS]**

Play experience combined with player observation, participation and interaction are key to unfolding the depths of the game structure and in turn unlocking meaning either embedded by the game developer or interpreted by the player in collaboration with the game system's predetermined constraints. Authorship of procedural systems within a game structure is clearly attributed to the game designer.

> **[BLOCK QUOTE BEGINS]**
> *"designers craft play, but only indirectly, through the systems of rules that game designers create. Play arises out of the rules as they are inhabited and enacted by players, creating emergent patterns of behavior, sensation, social exchange, and meaning."* [10]
> **[BLOCK QUOTE ENDS]**

In order to craft play, the designer must first understand the concept. Play is fundamental to human life and helps us to make sense of the world around us, to form meaning and understand social, political and cultural issues. Marshal McLuhan believes that *"games as popular art forms offer to all an immediate means of participation in the full life of a society, such as no single role or job can offer to any man."* [11] There have been many attempts to define play [12, 13] however it's pervasive nature makes it difficult to define [14]. In the context of this paper, when discussing play in relation to computer games and meaning making, it can be useful to consider Roger Caillois' definition of play as running along a continuum where paida (unstructured play) sits at one end and ludus (structured play) at the other. [15] At the extremes, unstructured play involves open ended interactions and is often associated with improvisation or free play whereas more structured play brings rules and conventions for interaction. [16]

Rules are central to Game Design processes, and all games have at their heart, rules, a goal, a feedback system and allow for 'voluntary participation'. [17] The designer may rely upon design frameworks to guide the creation of goals and rules for the player, such as the MDA (Mechanics, Dynamics and Aesthetic) Framework [18] or try to create a system which embodies 'a space of possibility' [19] for the player. But, as suggested by Eric Zimmerman, games have an essential unpredictability for the player and designer alike.

Because the play experience is often unclear during the design phase; it is not until it is played that its behaviour becomes clear. [20] Ultimately, the play behaviour is defined by the choices embedded in the game system by the game designer. Ian Bogost believes that in the design of these systems, the game designer can influence and persuade the player towards certain beliefs or ideas. [21] In the light of inherent unpredictability, behavioural structures and persuasive systems the attribution of authorship of meaning in game systems becomes more problematic.

[BLOCK QUOTE BEGINS]

All of this activity occurs within a game-system designed to support meaningful kinds of choice-making. Every action taken results in a change affecting the overall system of the game. Another way of stating this point is that an action a player takes in a game results in the creation of new meanings within the system. The meaning of an action in a game resides in the relationship between action and outcome. [22]

[BLOCK QUOTE ENDS]

Gonzalo Frasca [23] believes structured play can lead to closed products whose meaning is ultimately controlled by the game's author, therefore, it could be said that the flexibility of the 'possibility space' designed by the developed shapes the potential for the player to co-create meaning with the game's author. Frasca's assertion suggests that the more structured play is within a game the more meaning is defined by the game's creator. [24] A tightly defined space of participation with little opportunity for the player to make meaningful choices which in turn influence gameplay, narrative or outcomes, offers minimal co-creation of meaning; the authorship of the designer is absolute. In turn, it could be suggested that less structured play provides more space for co-creation of meaning between the player and the game's author. A more open possibility space with less defined rule sets, goals and/or narrative could be seen as an invitation from the designer to the player to invent rules for themselves and in turn new ways of interacting. Such 'meta-gaming' can lead to new or unexpected avenues of play and meaning making for the player. Where game structures support and reward the player for their contributions, recognition (and perhaps reciprocation) of co-creation by the system can occur, manifesting as an intrinsic reward for the player. Participation in this way could be said to foster investment from a player, as they are able to make decisions which are meaningful to them and which create a shift or change within the game world. It is important to acknowledge that the developer of the system is likely to have motivation (aesthetic, commercial or otherwise) in terms of the work which will shape their approach to play structure.

[BLOCK QUOTE BEGINS]

"Artists using games as a medium of expression, then, manipulate elements common to games—representation systems and styles, rules of progress, codes of conduct, context of reception, winning and losing paradigms, ways of interacting in a game—for they are the material properties of games, much like marble and chisel or pen and ink bring

with them their own intended possibilities, limitations, and conventions." [25] **[BLOCK QUOTE ENDS]**

The game designer in this case, will aim to utilize every aspect of the toolset of the game system to produce play and in turn infer meaning by directing, constraining and shaping play situations in order to persuade the player.

Whether a tightly defined or more open possibility space is designed for a player, their own particular history, play experiences, attitudes, beliefs and values will shape their interaction with and interpretation of meaning in the system. The communication of meaning is therefore mediated by the designer, the system and the player and thus like many aesthetic objects, is never direct. To complicate matters further, the play space itself can shape interpretation; these live spaces are inconsistent, constantly shifting in population, activity and form and thus can inadvertently lead to variance in play experience and discourses around the game from player to player.

HEADING: Social play and Meaning-Making

Concepts of play and active participation can be harnessed to explore the contingencies of possibility spaces upon meaning making. Nina Simon believes that participatory projects can allow the institution to be responsive and/or relevant to the lives, needs and interests of its citizens. In an artistic context, Claire Bishop claims that participation and thus, collaborative creativity *"is therefore understood both to emerge from, and to produce, a more positive and non-hierarchical social model."* [26] Broadening active participation beyond interaction with exhibits in the museum could therefore enhance the relationship between institutions and their visitors. Furthermore, play can act as a motivator for co-creation of meaning which is an important process in establishing a community of practice, whether in an exhibition context or more likely, within a curated participatory space. [27] In order to address the situational impact of the 'institution', it may be the case that sociological frameworks for participation within curation and exhibition design are needed. Taking the lead from participatory art much of the impetus behind co-creation is to restore *"the social bond through a collective elaboration of meaning."* [28]

In this way games can also be seen to have significant impact acting as 'social objects', rather than as everyday objects displayed in arcade units. Social objects are objects that allow social networks to develop around them by providing a locus for discussion. [29] Social objects can be personal (we have a direct connection to the object), active (they physically draw your attention to them in space), provocative (a spectacle) or relational (invite simultaneous use). [30] Computer games can be understood to fulfil all four categories whether in their active or provocative situation in space (think of the arcade) or in their nostalgic factors or in the need to have multiple players to make the game work (relational). The social object allows the viewer to direct their attention to a 'thing' rather than an 'other' and in turn can ease social interaction with an 'other' around the 'thing'. [31] Mary Flanagan extends this notion, suggesting that games are in fact social technologies.

[32] They can build relationships and interaction not only between the player and the game system but also between multiple players or between players and viewers. *"By playing together, people form close communities and develop a group identity and a sense of belonging."* [33] Such social technologies can be harnessed where active collaboration within a play space can form not only a close community but also through unstructured or semi-structured play, provides a possibility space from which shared meaning can emerge. In this way, play can operate as an organising system for social meaning making.

Participation can help the individual and the community to make sense of their experiences: *"learning involves an open process of interaction with the environment. This experiential process develops and expands the self, allowing one to discover aspects of oneself that were previously unknown."* [34] Hence it could be said that participation will not only allow players to create meaning for themselves in relation to an exhibit, but interaction within an environment; real or virtual, can help them to extend their knowledge of themselves.

HEADING: Visitor Agency and Curating Participation

The impetus for museums to become increasingly participative challenges many of the established principles that have legitimized them as civic institutions and consolidate their purpose. Museums established in the 19th century were founded on a paternal model for social improvement to educate the population of growing urban populations with increasing leisure time and disposable incomes. Characteristically part of the Modernist project these institutions embodied the Modernist grand-narrative that sought to collect and categorize objects and artifacts creating taxonomies and epistemologies that ultimately decontextualized objects from their function and transposing new significance onto the object that is indistinguishable from the museum itself. The critique of the Modern museum by Douglas Crimp aligns the crisis of authority in the museum with the crisis of Modernism and the emergence of Postmodernism. [35] In the text of 'On the Museums Ruins', Eugenio Donato highlights the specific issue facing museums curating exhibitions of videogames.

> **[BLOCK QUOTE BEGINS]**
> *Such a fiction is the result of an uncritical belief in the notion that ordering and classifying, that is to say, the spatial juxtaposition of fragments, can produce a representational understanding of the world.* [36]
> **[BLOCK QUOTE ENDS]**

The emerging conventions of videogames exhibition have relied on many of these established strategies resulting in the presentation of exhibits that employ categories and taxonomies based on chronologies, technologies and genre. This approach reinforces the dominant authorial voice of the institution and diminishes the authorial voice of both the game designer and the player. The Museum is a highly structured ritualized space designed to guide visitors

through a narrative constructed around the objects selected for display. However, it is the responsibility of the curator to create a coherent narrative that offers visitors access to a digestible experience while preserving the space to construct a subjective response to individual artifacts and their relationship with the situated context. How this meaning making activity is managed is crucial in walking the line between authorial voices. This balance is described by Lois Silverman as a 'blended space', that balances the significance of the messages sent *"from a sender to a receiver to a process of negotiation between two parties in which information is created rather than transmitted."* [37]

This call for activation of the visitor within a museum is not new. Traditionally in museums, participation has tended toward four models: contribution, collaboration, co-creation and hosted. [38] Each of these models relate directly to the curatorial nature of the exhibition and each presents an increased challenge to the authorship of experience and meaning making held by the institution. Contribution invites participants to provide materials which will be considered for exhibition i.e. photographs, stories, objects of historical interest. The level of participation is low, the institution remains in control of the design of the exhibition but the opportunity to participate is offered to many. Collaboration invites a small group of community participants (experts, knowledgeable or with experience in relation to the themes of the given exhibition) to be involved in the curation of an event or exhibition to enhance exhibition authenticity in reference to the particular goals of the institution. Co-creation of events and exhibition tends to be driven by the community, where they bring a need to an institution and take the lead on the creation of the event and thus control over the authorship, with support from the institution. Simon also presents a fourth mode which is hosted, much like the community driven approach of co-creation of events who curate and organise exhibitions or event within the gallery space.

As Simon's definitions of participation suggests, engagement and investment from a community is central to success. Broad participation in curation tends to lead to limited/democratic co-creation whereas deeper co-creation takes place with smaller groups. Co-creation is seen as being overall more democratic and thus can enhance the credibility of the institution in the eyes of the stakeholder community. Museums have the option to collaborate with communities in order to maintain cultural relevance. However, in order to achieve this, much like the game designer, the curator is required to let go of some degree of authorship and create a space of possibility within which the community can play.

HEADING: Curating Possibility

Museums have a range of frameworks and systems for the presentation of artefacts and for the design of participatory experiences. Yet, to better address the 'wildness' unpredictability and coded nature of computer games, game design theory can provide new models for participation and meaning making:

[BLOCK QUOTE BEGINS]

As players engage more directly in the design process, the line between gamers and designers begins to dissolve. To fully participate, players will need to learn more about the art of game design. Effective game design can yield spaces that encourage our exploration, provide resources for our struggles for dominance, evoke powerful emotions, and encourage playfulness and sociability. [39]

[BLOCK QUOTE ENDS]

Engaging visitors in the process of game creation would require the institution to embrace conceptual uncertainty as a generative source from which possibility can emerge. [40] There are examples of this approach outside of the institutional context, with a range of experimental festivals choosing to break games into component parts and to select a specific part as the sustained focus of participants for the duration of the event. Such a focus on the 'unit operations' of a game allows the participants time and space to actively engage and become familiar with a 'manageable' chunk of the complex process of game development, to demystify its approaches and form their own understanding of its meaning. [41] Such events often take the form of Game Jams which are often 12, 24 or 48 hour events of intensive game development by a newly formed group of developers. Game Jams are recognized for their benefits to the development community [42], learning possibilities [43] and possibility to disrupt practice [44]. The 'Lyst Summit' [45] for example, focusses upon idea creation and experimentation around a particular theme whereas the Game City and National Video Arcade's 'Jump' Exhibition [46] focuses purely upon the mechanic of the jump and its relation to achieving goals within games.

Game development processes, however, are difficult to unlock for those without technical know-how or design training. For such participants, active participation within or even one way consumption of a digitally driven game jam may offer very limited meaning making opportunities as the language, processes and technical knowledge can be exclusive. Here, perhaps Live Action Role Play (LARP) and other forms of role-play can address such barriers to entry into the design process, by removing the need for computers and technical proficiency and instead focusing upon playable design. Role Play actively engages those who are brave enough to not only play but also perform the design process and game process concurrently. LARP provides scaffolds upon which players, regardless of their experience, can work together, with a facilitator, to co-create knowledge around game development processes. [47] There have, in fact, been examples of LARP where the facilitator has been left behind by the group of players as they took ownership over the play experience, developing their own unique approach to game design beyond the limits of the given development space. [48]

Videogames exhibitions and Videogames conferences rarely present such participative opportunities for co-creation of knowledge and meaning, however, disruptors do exist in the form of games festivals which embrace participation in order to hand over responsibility for and perhaps deepen knowledge generation in participants. 'Feral Vector', "a festival about making

games and game-like things' for example mixes workshops, talks, game jam events, Live Action Role Play and physical making in order to facilitate "*game design, learning and experimentation and* play." [49] The website claims the event is *"primarily about design, in a way that's still accessible to non-industry people. If you feel like an impostor at games events, you're not only welcome here, we encourage you to attend."* [50] The philosophy of 'Feral Vector' clearly highlights issues in the presentation of, and discourse around, games as aesthetic and social objects; the unusual location (a church in a wood), short time frame and informal approach allow playful experiences to emerge for audiences designed through a carefully curated list of 'presenters' or 'facilitators.' 'Feral Vector' too, found situation to be a key factor in their success, moving from the urban center of London to rural setting Hebden Bridge has provided them with new play opportunities that could not be afforded within a city. [51] Such claims suggest that the creation of a playable space empowers the possibility space.

Similarly, disrupting concepts of situation, 'Now Play This', a three-day games festival hosted in Somerset House, makes use of parts of the building which are not typically open to the public. [52] The setting provides an informal play space of unfinished walls and concrete floors upon which the festival coordinators carefully situate works to draw visitors through the space. This festival aims to *"showcases the wider possibilities of games: the peculiar, the beautiful and the deeply experimental. It's a place for games that encourage us to play in new and wonderful ways."* [53] Such festivals typically last for 3-4 days, but further approaches to disruption of situation and of presentation can be seen in festivals which locate games in the city space such as "Come Out and Play", [54] and one night only events including 'The Wild Rumpus' [55] and 'Games are for Everyone' [56] which mix the social event with play experiences.

These forms of active engagement with curated non-institutional or temporary spaces represent engagement with the three categories which typically motivate participatory art, as suggested by Bishop: Activation, Authorship, and Community. [57] In this model, activation invites the viewer to become active participant and in turn allows them to take control of their experience of the artwork and in turn meaning making (i.e. social events and playable cities); Authorship promotes collaborative creativity and democratic creation of work, embracing the perceive notion of risk and unpredictability in the process to create a *"positive and non-hierarchical social model"* (i.e. Game Jams, LARP) whereas community seeks to form social bonds through collective meaning making (an opportunity afforded by all of the models discussed above to some extent). [58] Bishop's model, when applied to the institution suggests that harnessing aspects of participatory design whether in curation itself, the design of exhibition spaces or within a programme of events could tackle situational issues.

The playful structure of these events also maintains McGonigal's essential games elements of rules, a goal, a feedback system and allow for voluntary participation. Within game systems, an open possibility space can be seen as a discourse between the designer and the player where the game space is

the situation within which play conventions are obeyed or co-created. In a museum context, it could be said that the possibility space would be the co-creation of discourse between the curator and player/visitor in response to museum objects, and that the situation, the museum, defines rules for the 'player' such as 'fitting response' and conventions of action, behaviour and interaction for our 'player'. [59]

HEADING: Conclusion

During the consultation workshops and discussions conducted in the *Videogames in the Museum* network the recurring return to participative modes of engagement continued to challenge curators and museums professionals to questions the assumptions about the conventions of their practice and the nature of their institutions. It was through engagement with the stakeholder community of games designers, and development professionals that modes of exhibition and visitor engagement drawn from the world of games and play began to coalesce.

The co-creation of solutions to the challenges facing institutions that sincerely wish to contribute to the understanding of videogames design and the principles of games development was ultimately playful, interactive and consensual. The discovery of new modes of exhibition and engagement were participative, active and collaborative. It came as no surprise to those involved that these processes led to a deeper and clearer understanding of the contingencies and complexities of videogames and the variety of motivations and experiences of players. The parallels between games and museums spaces as rules based environments where participants are invited to construct meaningful experiences through engagements with authored narratives and significant artefacts and events emerged as a conceptual possibility space for new approaches to curating videogames.

This approach not only offers a way to exhibit, display, enact and perform videogames, but by recognising play and the experience of videogames as socially cohesive, participatory and meaningful it offers a new way for museums to fulfil their social contract with their communities.

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Ola De La Vida

A Social Play Game

Lynn Parker, Danny Parker, Alex Pass and Mona Bozdog (2018)

Practice Publication

1.0 Executive Summary

Ola de la Vida (ODLV) is a three-player cooperative game which was produced over the course of 48 hours within Global Game Jam in January 2017, at the Abertay University Jam Site.

The Game is a playful intervention (artefacts or events which seek to bring people together through play) that aims to invite players to form temporary relationships with their co-players through physical contact, collaboration and coaching during play in a co-located context (i.e. where all players are present in the same play space). The game also seeks to expand the play experience to the wider audience by inviting different kinds of spectatorship.

The game was designed by Lynn Parker, Danny Parker, Alex Pass and Mona Bozdog. Since its inception, it has undergone significant development to enhance its usability (through tutorials) and its features to enhance the development of a community of play, including the introduction of a clearer scoring system. Lynn Parker contributed to the design of physical interactions within the game, the enhancement of usability through tutorials and the creation of digital art for the game in partnership with Alex Pass.

"I really liked the collaborative nature of the game and the (physical) contact with others, and of course the opportunity to dress up!"

"I have never felt such joy and anticipation stepping up onto a wii fit board."

Ola De La Vida as a practice-as-research work offers design insight into use of spectatorship to create a temporary community around a game and to enhance the facilitation of discussion between active players, previous players, spectators, and semi-spectators. Semi-spectators are seen to be active within the magic circle of the game to some extent, but to also have a critical distance from the game to observe, strategise and improve their play performance. The research proposes that there are two forms of semi-spectatorship: internal semi-spectatorship, experienced by the players and external semi-spectatorship, experienced by the spectators.

Above: People playing ODLV at Games are for Everyone Volume 5 in Edinburgh in April 2017.

1.1 Exhibition Portfolio

International Game Developer Association Dundee Play Party. 9th February 2017. Dundee, United Kingdom. 128 Attendees.
Scottish Parliament. 21st February 2017. 150 Attendees.
Games are For Everyone Volume 5. 21st April 2017. Edinburgh, United Kingdom. 500 Attendees.
Game Jam 2. 20th May 2017. Perth Museum, Perth. 60 Attendees.
Futureplay. 2nd - 28th August 2017. Edinburgh, UK. 1500 visitors, 1385 plays.
Arcadia. 8th September 2017. Dundee, UK. 300 Attendees.

1.2 Awards

Audience Award, International Game Developer's Association Dundee Play Party.

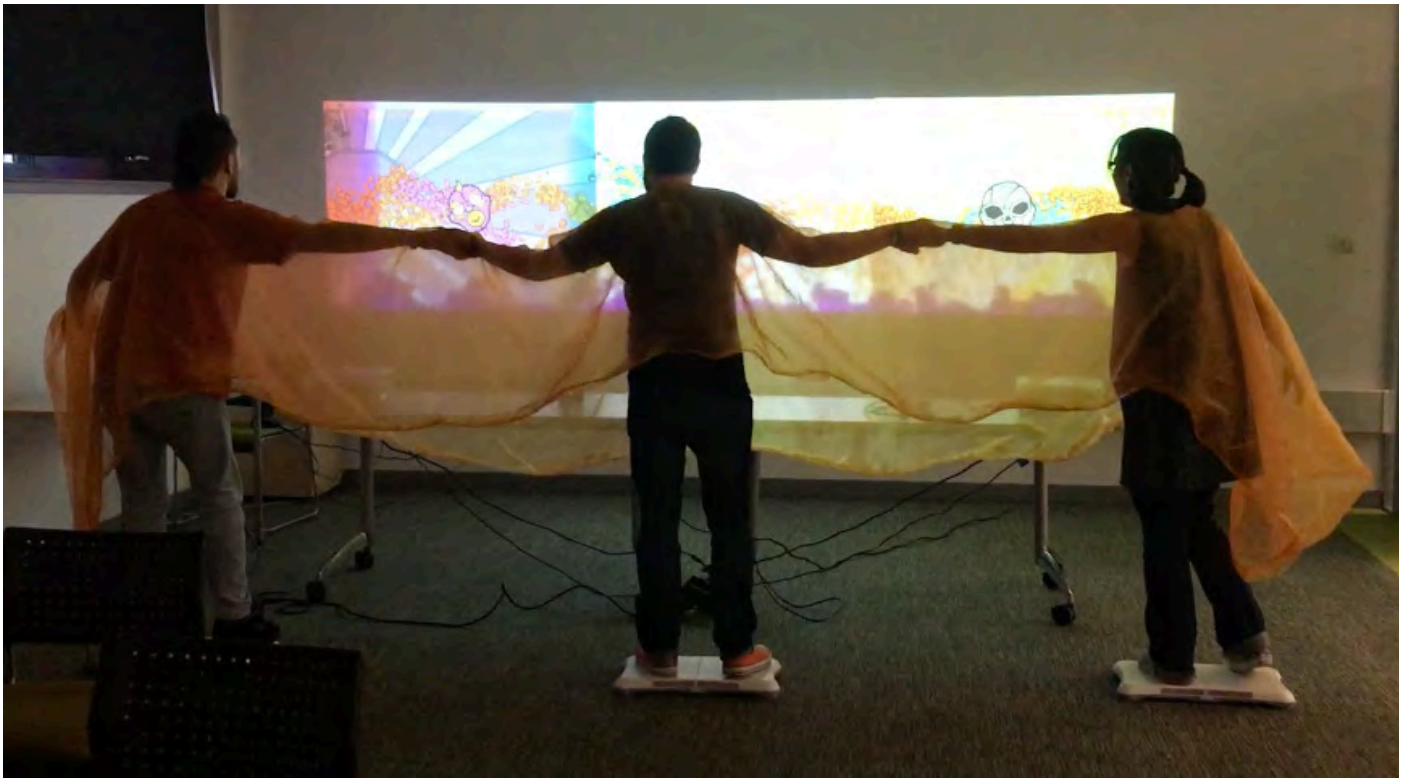
1.3 Relation to Research Practice

ODLV allows further study of the formation of temporary communities of play (a group of people who form temporary social relationships with one another due to interaction with a playful intervention). It is a playful intervention, an artefact which redesigns a space and the potential social interactions within that space and thus acts as an active case for discussion and analysis of social play design. Social play design, within the context of this research, is the design of an experience which invites people to form relationships with one another, temporarily, through playfulness to achieve a shared goal.

Play, in a social context, can have is social potential enhanced or quashed through elements embedded within the design of the play itself (i.e. rule structures, format, interaction methods etc.) and also the design of the space within which the game resides (i.e. size of screen, space for spectatorship etc.). The physical and digital design of ODLV aims to widen the play community to develop an "arena for exchange" (Bourriaud 2002) where players and spectators share experience, knowledge and collectively elaborate meaning through participating within and watching game play. This sharing demarks the play community from others within the larger social context of the event, as being 'apart together' (Huizinga 1949) from the other people within their current social context. In the design process of ODLV, a number of steps were taken to design to build a temporary play community around the game and enhance its social potential. The key design techniques can be categorised as follows:

The Curation of Spectacle
The use of physical game design to heighten social potential
The use of digital game mechanics to support internal semi-spectatorship
The widening of the magic circle through external semi-spectatorship

The game aims to empower individuals to shift seamlessly from active play to semi-spectatorship through to spectatorship, which widens the magic circle (Salen and Zimmerman 2004), expanding the potential community around a game. In this way, game design is seen to be integral in the creation of a space around which a community can form.



Above: The developers testing out the technical set-up of three projectors, three balance boards, the poncho and the maraca controllers at the game jam

1.4 Semi-spectatorship

Observation of players, reflection upon the game play experience and formal and anecdotal user testing data has led to the identification of the potential for what could be called, a 'new' form of spectatorship: Semi-Spectatorship. The semi-spectator is believed to exist in two forms: internal to the game, as afforded by the design of the game, and external to the game, as afforded by the design of the game and the game's play space.

Internal semi-spectatorship is where a player is active within the game to some extent, but has enough distance from the action to observe, analyse and critique the game. For example, in ODLV, the players are always 'active' in that they form a circuit which allows play to happen and that their physical form impedes the movement of others. However, the balancing of game play is such that, at times, some players may have a lower workload than others, and therefore, are able to observe the gameplay as a whole, to strategise on their approach, make adjustments to their play style or potentially support their co-players through repositioning themselves to offer them a little more movement or verbal coaching.

External semi-spectatorship is where an audience member is enlivened with participative potential and can impact the play session to some extent. This may be through creating a supportive, celebratory or consolatory atmosphere within the play space, or through supportive shouts of advice or subversive heckles as a form of distraction (a form of dark play (Schechner, 1993)) for example. External semi-spectators can also be activated by the players, drawn, potentially involuntarily into the play action by the active players through the affordances of game design (Such techniques can be seen in Johann Sebastian Joust (JS Joust) (Die Gute Fabrik, 2014) for example, where players can activate spectators into external semi-spectators by using them as human shields or buffers).

It is proposed that the semi-spectator (whether internal or external) sits somewhere between active player and spectator, having critical distance and interactive potential which can be used to alter player-player and player-spectator relationships.

Semi-spectatorship is analysed from a design perspective and contextualized through observation of other games an academic paper which

Above: A screenshot of the digital game play. Each mask represents a player and the coloured confetti showcases the part of the wave that they are able to control.

is currently under peer review and is presented in Appendix A. This paper is co-authored with Mona Bozdog, a collaborator on the development of ODLV and sets out the case for each of the design techniques utilised in ODLV as enhancing the community around the game. Please note, that the paper in appendix A draws from a more limited sub-set of user testing data than this Practice Publication.

2.0 Research Questions

What techniques can be used in the design of a social play game to enhance its social potential?
Can designing for social potential enhance the play community around a social play game?
In what ways does the level of participation of a player in a social play game change their play experience and relationship to their fellow players and spectators?

3.0 Methodology

The research questions were initially explored through practice-as-research where a game was designed that utilised spectacle and performance in order to invite spectatorship and enhance the social potential of a game to create a temporary community of play.

The four design claims made about the game were informed by the findings of a focus group interview carried out with the game's developers three months after the development of the game. The questions discussed by the developers focussed upon design approaches, the links between physical and digital design, the perceived player and spectator experiences and the potential community forming aspects of the game. The developers also discussed their observations of players interacting with ODLV during two play parties: the play party after the Global Game Jam and Independent Game Developers Association (IGDA) local Play Party. The interview data was thematically analysed in order to identify and formalise the design methods that contributed to the enhancement of the social potential of the game. The findings of this process were contextualised around the concepts of social objects (Engeström 2007), expressive design (Reeves et al. 2005, Márquez Segura and Isbister, 2015), and collaborative play (DeKoven, 2011; Huizinga, 1949) in the co-authored paper included in appendix A.

These design claims were then assessed against two sets of user data, formal user focus group testing data and anecdotal evidence gathered via social media from play party participants.

Three focus groups were conducted in a university-controlled environment where players were able to try out three participative games before taking part in the focus group. Participants were invited to play Bounden (Game Oven 2014), JS Joust (Die Gute Fabrik, 2013) and Ola De La Vida (ODLV). Bounden and JS Joust were chosen to complement the testing of ODLV due to their particularly physical, social and performative, to set the scene for discussion. Each focus group session lasted around one and a half hours. The players were introduced to each of the games and were invited to play them. After thirty to forty-five minutes of play, the groups participated in a semi-structured focus group session which focussed on: general impressions of the game, insights into the gameplay experience, consideration of the differences in gameplay depending upon player position, discussion of the role of the poncho and discussion of watching other people

play. Participants were also invited to provide any general comments that they had. In each session, secondary unplanned questions were used to further investigate any emergent points with the entire group (Kvale and Brinkmann, 2009).

Participants varied in gender, age (from approximately 18 - 50) and disciplinary background (psychology, games and arts students from undergraduate and postgraduate levels) across the groups. Focus group one consisted of 18 participants (50-50 split in gender), group two consisting of 14 participants (all identifying as male) and group three consisting of four participants (3 female, 1 male). Of the 36 participants, only five had previously played the game in a social setting, the rest had no previous experience of the game. The final focus group offered very little insight into spectatorship due to the small number of participants, but they actively reflected upon their experiences of playing games at play parties, acknowledging the limitations of the scenario and providing helpful insight into the differences between an academic and social play setting. The discussions were audio recorded and analysed. Thematic analysis was undertaken with codes being inductively drawn from the data, rather than mapped onto the data to allow new perspectives upon the game play experience to reveal themselves within the data, rather than searching only for data which supported or disproved the design claims (Braun and Clarke, 2006).

The academic setting of these focus groups allowed for focussed discussion around game dynamics, interactions and play experience, however, did limit authentic social play context behaviours and spectatorship. To tackle these limitations, a call using social media was made for participants who played the game in a social setting to share their experiences. This call was very open and encouraged players to share their thoughts about playing or watching the game. The resulting anecdotal feedback helps to provide some insight into authentic behaviours and spectatorship "in the wild" (Chamberlain et al 2012), but the sample is more limited at present (12 respondents) than that of the focus group data. This data has been thematically analysed, utilising a consistent approach with that of the focus group data.

Both sets of participant data have been utilised to firstly identify behaviours encouraged by the game which were not previously considered within the research and secondly to assess the effectiveness of the design techniques utilised by the creators to enhance the social potential of the game.

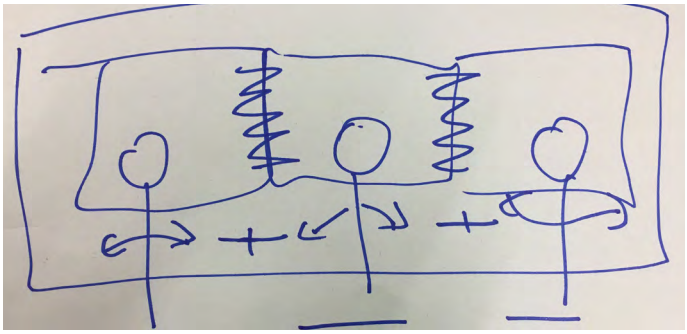
Above: The game being played at the IGDA Global Game Jam Play Party in Dundee in February 2017

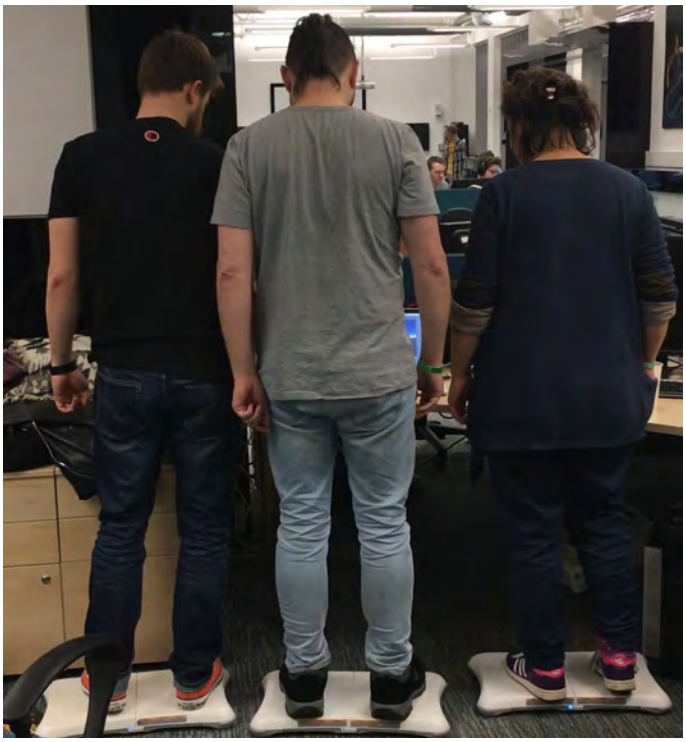
3.1 Design Approach

The game was created over the course of a 48-game jam. The designers, due to other commitments, input 20 hourseach in total.

The design approach drew from industry practices, using an iterative approach. Key features were implemented, polished and developed. The most important features (the balance boards, wave and piñata physics) were implemented first, then art, then visual polish.

Game feel was very important and thus was tested repeatedly by the team through play testing. The feel focused upon the connection between player movement on the balance board and the reaction of the on-screen wave. The interaction had to be direct to feel purposeful but not so fast that the on-screen wave would 'twitch' and become visually unappealing. This creates a mimetic interface (Juul 2010) which blurred boundaries between physical play and digital play.





Top: rough design sketch of the physical play space drawn at the start of the jam. Bottom: testing the balance boards for the first time with a digital prototype.

The balancing of challenge was also important to encourage teamwork and camaraderie. This was designed firstly through perfecting the number of piñata on screen at any time, secondly through adding dynamic shifts in the position of each player's on-screen wave and thirdly pacing the game to allow for internal semi-spectatorship.

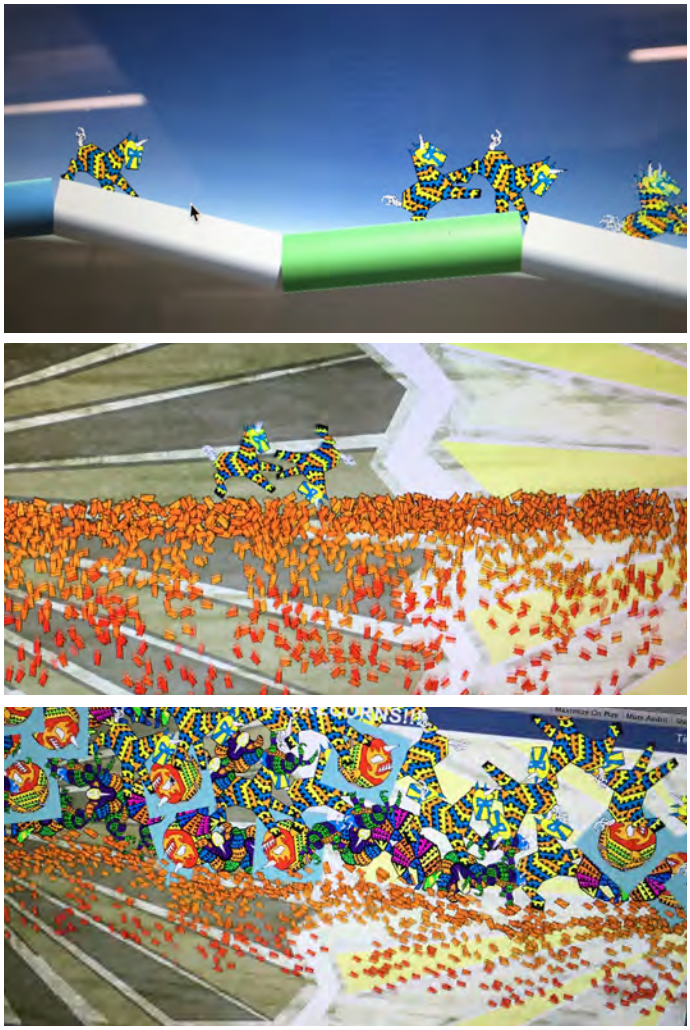
The technical specifications of the game mean that it has scale with the digital screen being four meters wide. In this way the game tends to be one of the largest objects in the play space drawing attention though its size and performative nature. Logistically, the footprint of the game requires space in the venue (providing space for spectators), demands attention by attendees (inviting spectatorship) and provides comfortable viewing of both the players and the gameplay at the same time all leading to enhancement of the potential for spectatorship of play.

Performance as play was also a central design approach; the layout of the play space effectively places the players upon a 'stage' in front of the digital game play for an audience to watch. This is further supported by the poncho, which masks the individual identities of the players, melding them into one being, unified being. The costume was initially designed to address development time limitations, where there was concern that physical interaction measurement by the game may not be possible, but has became a key factor in promoting the performative aspect of the game whilst also providing the players with a level of anonymity to enhance their comfort in performing in front of an audience.

Forming a circuit between the players emerged as an opportunity to physically complicate the play experience. It also provided the potential to create interpersonal relationships between the players through physical contact and negotiation of physical limitations during play. However, it was given low priority by the technical team due to time constraints within initial prototyping and was implemented in the final hour of the game

jam period. Upon implementation, the entire team recognised the significant change to game play from players effectively being 'alone together' (Ducheneaut et al 2006) (i.e. only paying attention to their own play actions) to instead acknowledging their co-players in a cooperative play experience driven by physical interconnectivity and reliance. The physical grounding in the world also blurs boundaries between the physical play space and the digital play space, drawing player attention to the physical play space through their use of their bodies as input devices and the impact of their co-player's movement on their physical capabilities (i.e. the extent to which their movement is limited by holding hands with the other players).

For further in-depth information on the approach to designing ODLV, please see Appendix A.



Top image: the look of the prototype 23 hours into the jam. Middle Image: the look at 28 hours. Bottom image: a failed balancing experiment which aimed to best gauge the right number of piñata to make the game fun and challenging.

3.2 Technical Specifications

Ola De La Vida is a three-player game which requires players to use their bodies as input devices to manipulate digital platforms within on-screen gameplay. The game makes use of three Wii balance boards and two custom built maraca controllers as input devices. The balance boards are positioned side by side, spread arms-length apart from one another. The maraca controllers are connected to a Makey Makey to form a circuit, which is completed when the three players connect hands to begin play.

The maracas detect physical contact between the players during the game and will pause the game if players lose contact. The digital gameplay is displayed via three projectors which create an oversized widescreen play area positioned in front of the balance boards. Each player has a dedicated screen in front of them driven by a triple Head to Go adapter and game play is continuous from one screen to the next, resulting in a large scale wide ratio projection.

3.3 Game Play

In preparation to play, the players don an oversized poncho for three and step onto their individual balance boards facing the digital play space. Players then physically form the 'Wave of Life' by holding each other's hands. The player at either end of the wave holds one of the two maraca controllers to complete the wave. The resulting physical contact between the three players complete the maraca controller's circuit and if weight is also detected on each of the balance boards, the game begins.

To play, each player must shift their weight from one side of their balance board to the other in order to tilt their part of the on-screen wave. The player parts of the wave are represented by three platforms, one pink, one red and one blue, each individually controlled by the players. Tilting their bodies to the right will tilt their part of the wave to the right and so on. Each player wave segment is adjoined by physics driven 'connectors' which are affected by the tilting action of the two adjacent players (i.e. player one and player two's actions affect the behaviour of the connector which joins their platforms). Together, the players tilt to

Above: People playing ODLV at Games are for Everyone Volume 5 in Edinburgh in April 2017.

and fro on their balance boards, whilst holding hands, manipulating the form of the on-screen wave.

Players must work together to use their manipulation of the wave to help piñata to cross safely from one side of the wave (screen) to the other. The piñata are driven by physics simulation and spawn from the left side of the screen. Each player uses their bodies to affect their part of the wave and the negotiated wave space between. They must use in game gravity and real-world momentum in their physical (and thus also digital) movements to coax the piñata across. When a piñata successfully crosses the screen, the players score one point. Play continues for one hundred and twenty seconds or until the players let go of one another's hands.

4.0 Participant Feedback

Players were invited to submit comments on their play experience via e-mail and Twitter. Below are a series of voluntary comments provided by people who have played Ola de La Vida.

"Poncho donned and hand-in-hand with the other players, vibrant and dynamic visuals responded to my swaying as we co-ordinated our movements. Guiding the various pinata-like objects became a focused and rhythmic dance, occasionally disrupted by a small pile-up prompting much hip wiggling and laughter. After some minutes of confetti bursts and luchador outcries we removed our giant poncho and thanked our partners, lively music celebrating our performance."

Above: One of the developers playing ODLV with attendees to the Arcadia Warehouse Party in Dundee, September 2017

Above: ODLV being played at Arcadia in Dundee in September 2017

"while I was watching I saw teams formed of strangers who happily joined each other to play, and for the couple of minutes of the game had a shared experience with collective goals. We were required to cooperate and learn how to work together, which is way more rewarding and more fun than solo games."

"The bright exciting visuals and loud music also added to the atmosphere of playful silliness and made the experience feel a lot more showy almost like a bit of a performance particularly due to the nature of playing it in public and the inevitable crowd of spectators it drew in."

"Ola da la vida (ODLV) is a game just as entertaining to watch as it is play. ODLV is a intimate and physical game which promotes teamwork and thinking carefully about how you should move your body. Fun, physical and visually satisfying."

"The controls are intuitive and the team aspects of the challenge seems to bond strangers and friends as they aim to beat the highest score."

"The experience of playing the game was even more interesting, especially with people I didn't yet know as it requires both physical interaction and strong teamwork, forcing you to overcome any social awkwardness extremely quickly."

Above: ODLV being played at Game Jam 2 at Perth Museum in May 2017

Above: People playing ODLV at Games are for Everyone Volume 5 in Edinburgh in April 2017.

5.0 Results & Discussion

ODLV is claimed to enhance social potential and create a temporary community of play through: The Curation of Spectacle; The use of physical game design to heighten social potential; The use of digital game mechanics to support internal semi-spectatorship; The widening of the magic circle through external semi-spectatorship. These claims were assessed against user experiences in both formal focus group testing and through anecdotal evidence shared by players via an open call on social media. User experience suggests that ODLV achieves it goals through these four design approaches to varying levels.

5.1 The Curation of Spectacle

The scale and whimsical nature has been acknowledged in anecdotal responses as providing draw for over half of the players within the setting of a play party, with the silliness, novelty and fun atmosphere being attributed to attracting curiosity and encouraging participation. The scale of the game and its unusual form was identified by a further 16% of respondents as enhancing appeal and draw. The game won the audience award at the IGDA play party, suggesting it has ubiquitous appeal. Focus group participants offered very little insight into the effectiveness of these strategies due to the designed nature of theinvitation to play the game.

The datasets are inconclusive regarding the impact of spectacle strategies on drawing people towards the game. Discussions with play party curators, however, reveal that spectacle strategies, such as creating a space to watch games and increased scale to enhance spectatorship, do widen the audience around a game (Gramazio, 2017, Wiedemann, 2017, Dyce and Fairweather, 2017), especially physical or multiplayer games (Dyce and Fairweather, 2017). Social play designers similarly recognise the use of unconventional display systems to enhance spectatorship and social interaction (Goddard and Muscat, 2016).

5.2 The use of physical game design to heighten social potential

The game is recognised by 30% participants across the datasets as having social potential to bring people together with the main techniques for facilitating this residing within the physical design elements of the game: the poncho and need for physical contact.

Within the focus groups, the poncho was connected to heightening immersion (36%), creating links between the players because they all looked "silly" together (19%) and that:

The fact it is one big one [poncho], it makes you feel as a whole, so you have to work together as a team rather than as an individual because you're thinking "okay, I'm linked, I'm bonding with these people" this is one big poncho, so this is my team and we all have to work together, to the same goal.

The poncho also helped decrease anxiety around the physical contact element; 25% of participants acknowledged that holding hands with a stranger is not typical behaviour, but "it's completely fine when wearing a giant poncho." Obscuration and a sense of team working/camaraderie are attributed to easing this social tension. However, the poncho is also seen by some to work against the mimetic nature of the game (5%), acting as a barrier to learning from others through spectatorship because "you can't really copy best practice because you can't see."

8% of focus group participants raised concerns around social anxiety about playing together, even after putting on the poncho, but they all agreed that as soon as the game started, these worries faded away. For these participants, the distraction of the aims of the game and scoring points became a release from the social anxiety of interacting with other players. In this way, the digital gameplay acted as a social object, taking the steps to ease interaction that were not achieved by the ritual of preparing for the game i.e. putting on the poncho, stepping on the boards in unison, taking the maracas and holding hands. These steps were designed as an inter-

Above: The third iteration of ODLV, in installation format at FuturePlay Festival in the Edinburgh Fringe, August 2017

Above: A close up of the maraca and festive space decoration at Arcadia in Dundee, September 2017

action structure for the game as a social object (Engeström 2007), introducing the players to one another and increasing their social discourse in a staged and supported manner. For 8% of players, however, this structure did not ease social anxiety, but instead the distraction of focussing on in game tasks did. The game in this way, mixing its digital and physical elements, eases differing levels of social anxiety and concern that may be presented by the diverse audiences which encounter a game in a social play context.

Anecdotal evidence from play party contexts points again towards the novelty of the poncho as enhancing the appeal and draw of the game (58%). Others acknowledge making connections with strangers temporarily in the play experience (33%) due to the odd number of players required and the tactile nature of the game. Watching the game is widely acknowledged to be entertaining by the anecdotal respondents (58%) however, across both data sets very little information was provided around social potential in spectatorship, motivated by the game play space.

With ODLV, the cooperative nature of the mix of physical and digital tasks clearly enhances the social connections made between players. The poncho as costume and induction into the experience is key to building a sense of camaraderie and inviting spectatorship. It is difficult to draw conclusions, however, in terms of the influence of other physical design elements (i.e. the scale of presentation, the alternative control systems, the space for spectatorship) in enhancing social potential or building a community beyond the co-players.

5.3 The use of digital game mechanics to support internal semi-spectatorship

The concept of internal semi-spectatorship with ODLV players, the ability of the game to foster spectatorship whilst the player is actively involved, is acknowledged across the focus group data and manifests itself mostly through non-verbal communication or strategising. In every group, the different workloads of each player were acknowledged, and their reception varied depending upon the play styles and interrelations within the group.

For more boisterous testing groups, verbal communication did not work as the co-players often spoke over one another. This resulted in a reliance on non-verbal communication and more hands-on approaches to gameplay where co-players felt comfortable wrestling their co-players into the necessary positions to achieve their goals. Some players attributed this approach to having difficult describing in words what they needed another player to do (14%). More reserved groups also reported apprehension in using verbal cues but this was motivated by a concern over offending another player by telling them what to do or that they would not appreciate being told what to do themselves (10%). One player notes that they provided only "gentle nudges" because :you don't wanna feel like you're controlling someone else's fun."

Verbal communication tended, where it existed to take place between the player on the left and middle. The player on the right was expected to achieve their goals without the help of the other two players, due to the design of dependency in

Above: People playing ODLV in a focus group session held at Abertay University, Dundee in October 2017

the game. Verbal communication was also limited by the physical positioning of players in the play space where communicate along the entire line of play is not possible, or for some, seen as necessary. This design approach, partnered with social boundaries limit the extent to which players verbally coach one another. Players did, however, comment on taking moments to strategise whilst they were playing (28%), with 5% choosing to help their co-players by blocking piñata until they had cleared their play space. Strategy, therefore, for some, did successfully emerge during gameplay observations of co-players workloads but was not a significant element of the play experience for the majority of the players.

Players across the focus groups widely discussed the different roles and dependencies in game play, with a minority claiming the differing roles were a positive aspect of the game (8%). The majority focussed on how to balance the roles of each of the players to make a comparative experience for everyone or to increase the challenge, removing dependency in gameplay. Dependency was thought to be an issue by participants as the experience of each of the players relies upon the skills of their co-players and could potentially lead to frustration and dissatisfaction in the play experience. Design dependencies, however, were a conscious design decision and seem, in part to enhance collaboration, non-verbally rather than overtly.

5.4 The widening of the magic circle through external semi-spectatorship,

The examination of external semi-spectatorship in a focus group setting was very difficult, as the groups were limited in size and the formal setting implied appropriate behaviours which differ greatly to those within a play party setting. When discussing spectatorship, however, ODLV seemed to reveal competitive motivations for watching, where 17% reported being critical of others when watching and a further 17% reporting that they watched in order to see if their score was beaten. In both cases, players suggested that these were motivators to play or to play again.

Participants across the dataset recognise that the game is fun to watch, and that, even more so when the players are putting a great deal of ef-

fort into the game. This sentiment was eloquently described by a focus group attendee who said that at first, they had been laughing at the people who were playing, thinking that they looked like "dafties" (a Scottish term for being an idiot) and then acknowledging, "after you've actually played it, you're like 'nah, that's actually quite cool.'" The embodied knowledge of playing thus, can be seen to shift the potential interpretation of the spectacle and spectatorship for previous players, reframing the experience through play. Watching people play makes you realise how silly you looked, even though you felt like you were doing well creating a sense of camaraderie between the players and the spectators and enhancing the positive emotional contagion around the experience.

External semi-spectatorship thus can be seen to have potentially positive and negative implications on the play experience. These implications were not felt by the players within the focus group setting, perhaps due to the formal nature of the environment limiting action being taken in response to spectating.

For the players, 33% acknowledged an awareness of the presence of an audience, but claimed their focus was on gameplay, communication between co-players and consideration of the body positions. Some players believe "You are the wave and everything else blurs into the background." This is attributed by some to the physical nature of the game requiring complete investment, and by others to the poncho which to them is an instant invitation to invest and have fun.

The open nature of the call for anecdotal evidence means that there are very few references to the influence of spectators on the play experience, however 67% of participants point generally towards the fun atmosphere created by the game and enjoyment in watching others play:

"When I first saw ODLV being played it looked ridiculous hilarious and a lot of fun. Its extremely unique method of interaction was something I had never seen before and instantly sparked a childlike curiosity of wanting to try it out myself."

External semi-spectatorship, clearly from the focus group expereinces, can be driven by positive or negative motivations for watching, and although these motivations did not manifest themselves in a form of external semi-spectator action, they clearly engage spectators within the magic circle of the game and have the potential in more informal settings to shape the play experience more actively.

Above: People playing ODLV at Games are for Everyone Volume 5 in Edinburgh in April 2017.

Above: People playing ODLV at Arcadia in Dundee in September 2017

6.0 Dissemination & Impact

ODLV has been exhibited across Scotland and to date has been experienced through play or spectatorship by more than 1,900 people. The game was also submitted to the A MAZE. / Berlin festival awards and is showcased on their website alongside all the other submissions to an international audience (A MAZE. GmbH 2016).

ODLV was identified by the organisers of the FuturePlay Festival as an ideal contribution to their 'Tech Zone' strand and thus is currently installed at the FuturePlay Festival at the Edinburgh Fringe Festival for the month of August (Assembly Festival 2017). Attendance figures for this event are yet to be provided by the organisers.

This selection of the game by the festival organisers to be showcased to an international audience at a premiere digital media event in the capital, alongside its audience award at the International Game Developers Association Play Party in Dundee demonstrates that this game has been judged by peers and experts in the field of game development and by general audiences to have worth. The team have also been approached by an organisation who wish to license the game to be part of a touring exhibition which will partner conferences and corporate events to promote team building and new technology. The team are in early discussions regarding this licensing opportunity.

7.0 Conclusion

Player feedback and industry response (i.e. selection for FuturePlay and the potential licensing opportunity) suggest that ODLV is recognised by peers and the public alike as having value as a social play game.

ODLV utilises scale, conviviality, play as performance and novel physical interaction in order to enhance the social potential of the play experience. Within play, the poncho and physical contact required by the game are recognised to increase collaboration and a sense of team work. Internal semi-spectatorship exists within the game, but its activation through designed dependency between players is not recognised by extensively by players as a positive element of the experience. It does, however, for some players, provide an opportunity for strategising and enhancement of social bonding through play.

External to the play experience, spectatorship reveals both competitive and supportive motivations for watching play. The potential for external semi-spectatorship to influence the play experience is neither proved nor disproved in this study due to limitations presented by the formal nature of focus groups and open nature of anecdotal feedback data gathering. Studies have been undertaken on the influence of spectators on play experience and there are cases which support the potneial for external semi-spectatorship

(Downs et al 2014; Kappen et al 2014). Further focussed research data is needed, however, to fully explore this aspect of the game's design.

It is believed from the research data, that ODLV does widen the magic circle of play, inviting spectatorship. Although, not openly identified by any respondents as the reason for spectatorship, the scale of the game and its performative nature are thought to be core to widening the magic circle. The reasoning for these claims is the significant number of respondents who identified enjoying watching the game in informal social play contexts (58%). In such settings there are a number of parallel play sessions occurring, competing for their attention. The fact that ODLV can hold attention in this setting suggests a wider magic circle and sense of investment by the spectators. Within focus groups, players also described competitive and supportive motivations to spectate, which suggest a level of engagement and buy-in to the play experience beyond mere spectacle.

ODLV as a playful intervention clearly creates temporary bonds between players through costume, collaboration and physical contact. There is some evidence of the bonds being extended beyond the players and into the spectators through a feeling expressed by some of feeling silly together. It could be said that in permitting to wear the poncho, players are inducted into the club of the game, where the players and previous players are all "apart together" (Huizinga, 1949) in being 'in the know' about the complexity, conviviality and embodied experience of play.

The claims of widening the magic circle further through external semi-spectatorship and the use of spectacle to enhance social potential require further research in order to be fully supported, however, there is evidence within the existing data set that strategies of collaborative play, play as performance and conviviality enhance the novelty, appeal and draw of the experience.

Above: The development team celebrating the end of Global Game Jam and completion of the first iteration of ODLV at Abertay University in January 2017.

Above: ODLV being played at the Scottish Parliamen in February 2017.

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Appendix A
A Three Person Poncho and a Set of Maracas: Designing Ola De La Vida, A Co-Located Social Play Computer Game

Paper by Lynn Parker and Mona Bozdog. Submitted to DiGRA 2018.

A Three Person Poncho and a Set of Maracas: Designing Ola De La Vida, A Co-Located Social Play Computer Game

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ABSTRACT
Events that bring people together to play video games as a social experience are growing in popularity across the western world. Amongst these events are 'play parties,' temporary social play environments which create unique shared play experiences for attendees unlike anything they could experience elsewhere. This paper explores co-located play experience design and proposes that social play games can lead to the formation of temporary play communities. These communities may last for a single gameplay session, for a whole event, or beyond the event. The paper analyses games designed or enhanced by social play contexts and evaluates a social play game, Ola de la Vida. The research findings suggest that social play games can foster community through the design of game play within the game itself, through curation which enhances their social potential, and through design for 'semi-spectatorship', which blurs the boundaries between player and spectator thus widening the game's magic circle.

Keywords
Social play, spectatorship, performance, game design, temporary play communities

INTRODUCTION
Across the UK, Europe and the U.S., play parties (typically events which last for one evening showcasing video games in a social setting) have grown in popularity and number, from Wild Rumpus (2017) and That Party (2017) widely known to GDC (Game Developers Conference) regulars, to L'indécadence in Paris (L'indécadence 2017), Fantastic Arcade in Austin, Texas (Juegos Rancheros 2017), and Games are for Everyone in Edinburgh (We Throw Switches 2017). Play parties vary in scale, curation, format and regularity, temporarily popping up in venues across a city. They can be located in one place (perhaps one dedicated to games like Bar SK (n.d.) and LikeLike (Pedercini 2018)) or can travel

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across the country, as is the case with a train-based jam and play party, Synchrony (Demoparty International) (Montford et al 2018). Each year, this social play movement gathers momentum with the number of indie arcades, play parties and play festivals continuing to increase, suggesting a growing need and audience for social play, regardless of instability of funding (Wood 2016).

With the expansion of social play games events across the world, game designers are beginning to look at ways in which they can design for these particular environments, creating new conventions of design which foster social play and interaction (Dyce and Fairweather 2017). Game design for social play contexts tends to create unique experiences that players could not have elsewhere, perhaps through use of custom hardware, large scale game playing experiences in the form of installations, or massively co-located participative works which would not be feasible in a player's home. *Ola De La Vida* (translated into English as "The Wave of Life") (Smash it Open and See What's Inside 2017) is just one example of a game which is designed for a social play context. It relies on custom controllers, large scale projection and multiple players and is a form of "makeshift installation," which is difficult to recreate elsewhere, a typical identifier of games that are designed specifically with social contexts in mind (Goddard and Muscat 2016). Within this paper, *Ola De La Vida* is analyzed alongside other games designed for social play purposes in order to identify the techniques used by game designers to enhance social play potential. This paper also proposes that design for social play can expand the magic circle by welcoming the audience into the play experience, leading to the formation of a temporary play community around a game, heightening the play experience for all involved.

In recent years, academic attention has turned to social play, with studies exploring play contexts (Wood 2016; Isbister 2010), and the design of social play games (Goddard et al 2016; Goddard and Muscat 2016; Wilson 2012; Wood 2016). Literature in this field is limited, particularly in relation to the design of games that are intended to be played in social spaces (Goddard and Muscat 2016). It is the aim of this paper to build upon the existing literature in this field, further formalizing game design processes for social play in a co-located context whilst also exploring the experiential impact for players within - and possibly beyond - the social play experience. The particular focus on co-located play situations aims to uncover and analyze the affordances of game design approaches supported by the physically co-located playing of games. The design and impact of online social play and play communities has been widely studied academically (e.g. Pearce 2011; Bainbridge 2010; Ducheneaut et al 2006), however, the design and potential for games to promote social interaction within co-located play party settings has received less academic attention.

GAME DESIGN, COMMUNITY AND ENHANCED SOCIAL POTENTIAL

Play parties are designed around a curated collection of games or playful artifacts, either digital, physical or often times a mixture of both, which celebrate co-located social play. Play parties, not unlike arcades, sustain parallel and performative play (Lazzaro 2004). The games selected for showcase often exploit the features of co-located play, making use of multiple players, larger open play spaces or unusual forms of interaction, building upon multi-player party and performative games like *Mario Party* (Nintendo 1999), *Samba de Amigo* (Sega 1999) and *SingStar* (Sony Computer Entertainment 2000) but relocating play from the privacy of the front room into a public setting.

The attendees to a play party are often a unique blend of either active, former or potential players, a series of micro-communities who have been drawn to the event for a diverse

range of reasons, whether an interest in the games themselves, the social interaction of the event or the music and festive atmosphere. In this way, the play party fosters "ecologies of participation" (Fischer 2011) where attendees can interact to a level with which they are comfortable, whether through lower levels of participation such as spectatorship, or higher levels including direct interaction with games and discussion with other attendees. The play party and games which are designed for such spaces, therefore must recognize that "Social play in a co-located setting normally involves players and spectators, whose roles are fluidly interchanged as people move in and out of gameplay" (Márquez Segura and Isbister 2015 p.222). This fluid movement of participants from active gameplay to spectatorship (Reeves et al. 2005; Reeves 2011) and the parallel play sessions happening within a play party space presents designers with new challenges in order to engage player's interest, communicate the game concept and invite players to step up and into the play experience.

These new challenges in terms of inclusive design are being addressed by emphasizing the performative aspect of games so as to appeal to players and audiences alike (Reeves et al 2005; Reeves 2012). Designing play as a performance enhances the likelihood that watching play will provide a level of entertainment for an audience. This approach widens the magic circle, by providing greater opportunities for spectators to become "in the know" about the game, as can presenting a game in a public space with space for spectatorship or making use of spectacular hardware or play styles to draw attention to the game (Dyce and Fairweather 2017). This not only supports 'ecologies of participation' in social play events but can also lead to enhanced interaction between players and non-players within the play space thus widening the magic circle of the game.

The magic circle was first introduced by Huizinga (1949) and developed by Salen and Zimmerman (2004) to acknowledge the demarcation of players from non-players. It is a term which has been debated greatly within game studies (e.g. Stenros 2014; Zimmerman 2012; Consalvo 2009; Juul 2008; Liebe 2008), however, in the context of this research, it is defined as the boundaries of understanding presented by those who are 'in the know' in relation to game rules and meanings, and those who are not; this distinction acknowledges that by being involved in play, people develop shared understanding and meaning attached to particular in-game action and ultimately, develop their own conventions, behaviors and sense of value based upon these rule sets. Huizinga (1949) acknowledges play's ability to create a 'secret club' separate from the rest of the world and claims that involvement in such a play experience leaves an imprint upon players beyond the play itself. It is this concept of involvement and participation within the magic circle, or the widening of the magic circle through designing for social potential that is proposed to create this 'secret club' or temporary play community.

Johann Sebastian Joust (*JS Joust*) (Die Gute Fabrik 2013), for example, is a screen less competitive multiplayer computer game which places the player as performer in a digitally mediated fusion of arm wrestling and the playground game Tag. The players must protect their motion controller from fast movements, whilst trying to upset the motion controllers of their competitors. *JS Joust's* magic circle is permeable, with players often spilling into the audience in order to avoid or catch their competitors. Non-players can quickly interpret the meaning of actions and mechanics to become 'in the know' about gameplay. In turn, someone outside the "secret club" - on the outskirts of the magic circle - can become an insider through spectatorship and interaction with players and non-players.

From the perspective of 'object centered sociality' co-located multiplayer game such as this could be positioned as social objects (Engeström 2005; 2007). Social objects are

typically discussed in relation to exhibitions in museums and social media platforms where, the social object provides a 'third' thing which people can focus on, making interaction (between people) around a shared interest (the object) more accessible for the individual (Simon 2010). Social objects, however, can only reach their potential given an appropriate supporting structure and presentation to an audience (Simon 2010). This is where the play party comes into play, providing a space where objects can be shared and placed as a center point for discussion and shared experience for players and the audience alike, whether these participants have prior social relationships or not.

The players and spectators of co-located social games through shared experience, have the potential to become a form of 'play community.' Pearce (2011) and DeKoven (2002) (building on Wenger's theories of communities of practice (1998)), propose that communities can form through shared play of a specific game. Play is a universally shared experience and because of this, it can bring people together and form communities (DeKoven 2011a). By playing together, people form close communities and develop a group identity and a sense of belonging (Sutton-Smith, 2001). For Pearce, a community of play begins within any given game, but the connection develops to become about playing *together* rather than about the game itself.

Playing together at play parties can similarly create such communities, however, they tend to be temporary in form; people may attend as predetermined micro-play-communities, they may be brought together and remain together for the length of the event groupings or individuals/strangers might group randomly for a single play experience afforded by a game within a space (i.e. if the game requires multiple players/cooperation). Play parties provide supporting structures which invite participants to build temporary relationships with one another through play in a game-centered context.

SOCIAL PLAY DESIGN: A CASE STUDY OF OLA DE LA VIDA

A large group of spectators have gathered behind you, a large screen glows before you, the graphics are blurred, and the colors desaturated. You slip your head through an orange silky material which looks like an oversized poncho and step onto your play platform. You look to your left and see your friend (or a friend to be), who is sharing the same orange cloak. To your left, another friend's head pops out of the poncho. You are joined together by flowing fabric and shimmering lights, (what you will later recognize as the wave of life). As you take the hands of your fellow players, the screen bursts into color, ticker tape streams from the wave of life, festival music sings loudly in your ears, and you begin to feel the force of your friends pulling you to and fro, as they try to manipulate the on-screen action. Welcome to *Ola de La Vida*.

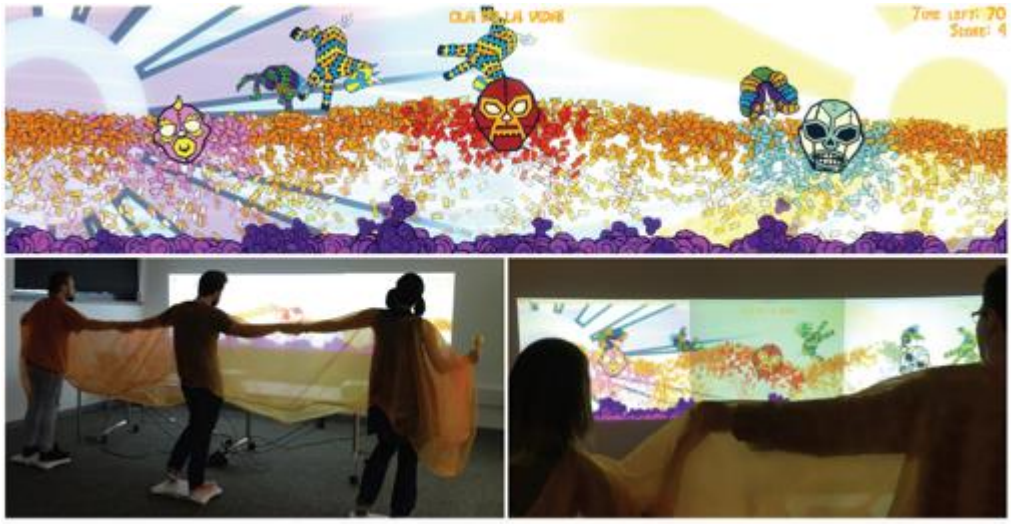

Figure 1: The digital gameplay of *ODLV* (top) is projected before the three players adorned in the play poncho in the play space (bottom left) allowing spectators to view their performance and the gameplay at the same time (bottom right).

Ola de la Vida (*ODLV*) is a three-player cooperative game created for social play (figure 1). The game invites players to use their own and their fellow players' physicality (form and balance) in order to help as many digital characters (in this case, piñata) as possible to safely cross the digital 'wave of life' in ninety seconds. It is a playful experience where players must use physical contact, balance, negotiation of action and perseverance in order to achieve their goal. The game was created by a team of four developers during Global Game Jam 2017 (GGJ). *ODLV* engages the play community by utilizing a mix of unconventional and conventional input devices in a social play setting, along with scale, player physicality and conviviality as central design themes.

To play, each player stands on their own Wii balance board (conventional input device) and must hold hands to make a human chain. The player at either end of the chain holds a golden maraca controller (unconventional input device) which senses whether the players are holding hands. The game begins when the players are in place on their balance boards and are holding hands.

The analysis of *ODLV* is presented within this paper as a case study for evaluating the design and facilitation of social play within a game made for play party events. The design process and final prototype is analyzed by drawing from qualitative data including developer interviews, formal focus group testing and observations of players during social play events. Player observations were made on four instances: during Global Game Jam play party held at the GGJ site, at an International Game Developers Association (IGDA) Play Party held locally just after GGJ, during its installation at the play party, Games are for Everyone in Edinburgh, and during its month-long installation in the Futureplay Festival Tech Zone at Edinburgh Festival Fringe in August 2017.

To provide a basis for developer reflection upon the game, approximately three months after development, a group interview was undertaken, with all four developers, to gather their reflections upon the ideation and development processes, team collaboration and the final artefact. In tandem with this, the developers discussed their observations of players interacting with *ODLV* during GGJ, in GGJ play party and at the local IGDA Play Party. There were 220 participants in attendance to the GGJ site and approximately 129 people attended the IGDA Play Party, however these numbers represent potential audience at each site rather than player numbers. The game has, since this interview, also been showcased at Games are for Everyone (500 attendees) and at FuturePlay (1,000 unique plays recorded), providing opportunity for further player observations to made. Player feedback from eleven players (to date) who played the game in a play party context has also been gathered via social media. Preliminary focus group testing has also been undertaken, in controlled lab conditions, with a group of eighteen, 18 – 35 year-old students, to test and evaluate the design claims made by the developers.

The group interview data acts as a valuable resource to identify, contextualize and analyze the design methods that contributed to social play, whilst the player experience data provides insight into the implications of the design of the game on player experience and the potential for the formation of "temporary communities of play" around the game in a social context.

OLDV & Temporary Communities

Analysis of designer intentions (drawn from the focus group held with the design team) presents a range of design approaches which embrace the co-located nature of social play situations like the play party, in order to widen the play space and promote temporary community formation around the game. These approaches can be organized into four categories:

- The Curation of Spectacle - The use of scale, novelty and emotional contagion to attract and engage spectatorship

- The use of physical game design to heighten social potential - Utilizing physical contact, costume and ritual to lower social boundaries, promote camaraderie and heighten spectatorship

- The use of digital game mechanics to support internal semi-spectatorship – The creation of in game dependencies and altered player workloads throughout the play experience to encourage team work

- The widening of the magic circle through external semi-spectatorship – The use of play as performance through mimetic interfaces and gestural excess to promote spectatorship and invite player-spectator interaction

The following section analyzes the social design approaches utilized to achieve these four outcomes, linking their level of success to player observations and feedback. The use of these design techniques in other game examples is also explored and contextualized in light of the broader academic context of game design and games studies.

The curation of spectacle

ODLV is a whimsical game. In order to be played, the game requires 3 Wii balance boards and 3 short-throw projectors to create an exaggerated wide-screen digital game play area,

in addition to utilizing a custom-built maraca circuit and poncho. Its technical specifications mean it can only be played at a play party and thus it is staged as an event, gaining an aura of ephemerality. *ODLV* makes use of colorful design, loud sound, fantastical lit-up costumes and props to make the game spectacular and emphasize its performative aspects. Everything about the game is loud, not only to draw audience attention in the busy setting of play parties, but also to promote positive connotations around the game with almost every aspect of the digital design promoting positivity.

The scale and whimsical nature has been acknowledged as providing draw for many players, with one social media respondent commenting that "When I first saw *ODLV* being played it looked ridiculous hilarious and a lot of fun. Its extremely unique method of interaction was something I had never seen before and instantly sparked a childlike curiosity of wanting to try it out myself" whilst another believes "The aesthetics of the game also make for a fun atmosphere in and out with the game. The poncho adds to the fun!" The game also won the audience award at the IGDA play party, suggesting it has ubiquitous appeal.

Positivity was core to the development process and design of *ODLV* which, in turn, reinforces positive play between the players and instills positive feelings in its audience. Isbister discusses emotional contagion, and observes that "In social play situations, this means that if the designer can get some players feeling happy, that others are more likely to follow along and feel that same way, creating a sort of snowball effect among the group. It helps to explain why party games can be so fun." (2010, p17). For spectators, watching the players engage with the game and having fun with each other, is fun to watch regardless of in-game performance or results. Both Lazzaro (2004), and Márquez Segura and Isbister (2015) have noted the emotional contagion and emotional snowballing effects associated with co-located social play, even when the backs of the players are turned to the spectators (as is the case in *ODLV*).

This sentiment was eloquently described by a focus group attendee who said that at first, they had been laughing at the people who were playing, thinking that they looked like "dafties" (a Scottish term for being an idiot) and then acknowledging, "after you've actually played it [the game], you're like 'nah, that's actually quite cool.'" The embodied knowledge of playing thus, can be seen to shift the potential interpretation of the spectacle and spectatorship for previous players, reframing the experience through play and promoting emotional contagion.

The use of physical game design to heighten social potential

The game challenges traditional social boundaries in digital gaming by introducing physical contact as a mandatory element of the play experience. This is by no means a new concept (see *Fingle* (Game Oven Studios 2012) and *In Tune* (Tweed Couch Games 2015)) but is recognized as leading to the development of social connections between players within social play contexts (Goddard et al. 2016). Márquez Segura and Isbister have observed the role of non-digital factors in diminishing social anxiety and proposed some strategies for developing a "a safe feeling among strangers" (2015, p.232). In designing *ODLV* some of these strategies are applied, firstly encouraging players to not take the game seriously through use of costumes, props and an audio-visual style that embraced the ridiculousness of aesthetic clichés. One social media respondent notes that "The game was lots of fun ... it took us a while to get the hang of the game and stop giggling about wearing a giant shared poncho! But when we did it was great."

The poncho amplifies the comedic effects of gameplay by hiding the individual bodies of the players and morphing them into a 6-footed, 3-headed, protean blob. *ODLV* literally re-configures player's bodies in space, creating a co-dependent physical chain of players, who are reliant upon one another to achieve digital gameplay goals. Players widely acknowledge (across the focus groups and social media responses) the importance of the poncho noting that it encourages their "enthusiasm" to play the game, that it helped them to embody a character when playing the game (taking on a role in a performance) and for one focus group attendee that:

> The fact it is one big one [poncho], it makes you feel as a whole, so you have to work together as a team rather than as an individual because you're thinking "okay, I'm linked, I'm bonding with these people" this is one big poncho, so this is my team and we all have to work together, to the same goal.

The poncho, as well as diminishing social anxiety, clearly communicates the collaborative nature of the game. However, it is also seen by some to act as a barrier to learning from others by studying their bodily posture in relation to the on-screen reaction/response. One focus group player noted that "you can't really copy best practice because you can't see."

ODLV aims to de-emphasize score-led gameplay by not having a win condition, players achievements are celebrated with a fanfare and confetti explosion at the end of the game. Developer observations also indicate that the third player is most likely to celebrate successfully rescuing a piñata by enthusiastically shaking their maraca, adding to the celebratory festival atmosphere of the game. The game does not encourage comparison of play performance from play experience to play experience, choosing to celebrate each play experience in and of itself. In play party contexts however, many players ask for information about the high score or whether their play performance was 'good' in comparison to others. This tendency suggests that when interacting with an unusual or new play experience, players need some way to understand their level of achievement in the play performance. Results of focus group testing supports this observation, with a number of the participants asking about the score and two groups returning to play again, motivated by an interest in "beating" the current session's high score. Where versions of the game have been showcased with a high score system, social media respondents acknowledge that "the team aspects of the challenge seem to bond strangers and friends as they aim to beat the highest score."

The game also employs a form of de-familiarization through ritual-like actions: putting on the poncho, stepping on the boards in unison, taking the maracas and holding hands. Loke et al. (2012) note the double importance of ritual and ritualized performance. Ritual is a special event shared with a community that affirms group values and strengthens group identity. Ritualized performance also privileges ways of participation based on proximity, the sensorial and visceral, therefore it challenges distant or unengaged habits of spectating. The staged introduction to the game (putting on the poncho, stepping on the pedestal, taking one another's hands etc.) creates an interaction structure for the game as a social object (Engeström 2007), introducing the players to one another and increasing their social discourse in a staged and supported manner.

The use of digital game mechanics to support internal semi-spectatorship

The players of *ODLV* have to work together to achieve a shared goal and score points. Each player 'manages' a section of the wave of life. For the player on the left, the workload is the highest, as the piñata spawn within their play space. The player on the right must wait

until both the player on the left and in the middle have been able to guide the piñata into their screen space. Within play, therefore, the workload of players will differ, as one player successfully moves a piñata out of their play space, they are given respite to review the actions of other players, transitioning from active play to temporary 'internal semi-spectatorship'; they do not become merely spectators as their body is still affected by their co-players and they are still powering the game by holding hands. During these moments of internal semi-spectatorship, the players review their progress, devise strategies to help or hinder their co-players activities and have the ability to counsel their co-players, offering guidance and advice. In this way the play space has potential for exchange between players, where they can make sense of and strategize in relation to the game.

The creation of a collaborative communicative game experience along with embodied play can "lead to a sense of togetherness and intimacy in play, creating a richer social experience." (Huizinga 1949, p7) and ultimately help the players to achieve "coliberation", where the needs of the individual are balanced with the needs of the team (DeKoven 2011b). Internal semi-spectatorship does not undermine the input of each player or the collaborative elements of the game, rather it recognizes that the game is designed around dependencies between players, and that game play itself is only possible due to the ongoing collaboration afforded by the game design.

When discussing the concept of internal semi-spectatorship with *ODLV* players within focus group testing, the ability of the game to foster spectatorship whilst the player is actively involved is acknowledged, but the extent to which it is a positive state is unclear. Players to the left of the screen felt a level of control: they could manage the pace of the game and workload of the second player by blocking or holding piñata (figure 2). The player in the left and middle positions widely suggested that they did not communicate with the player in the right-hand position, rather that they would negotiate action between themselves to deliver the piñata for the player on the right. The player on the right's ability to achieve their task of scoring points by delivering the piñata off screen was never questioned by the other players. Players in the right-hand position report varying experiences within focus group testing, some players acknowledge frustration in not being able to help and having the 'wait' for the other two players to deliver a piñata, whilst others recognize satisfaction in that they are the ones who actually scores the point and that "everything else is just a setup."

In discussing the potential for internal semi-spectators to coach the other players, many of the focus group players reported that they would not want to offend another player by telling them what to do or that they would not appreciate being told what to do themselves.

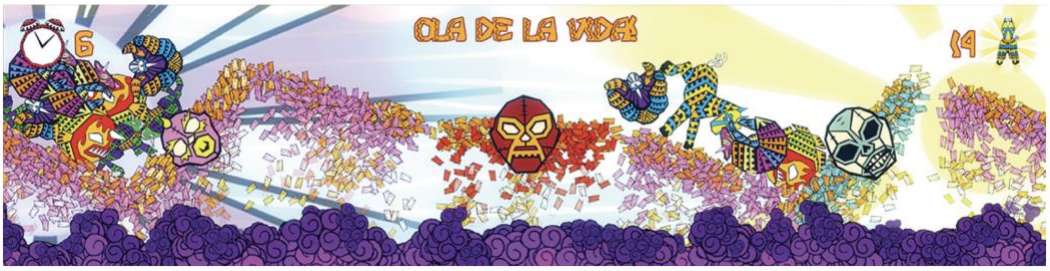

Figure 2: A screenshot of *ODLV* showcasing the effects of internal semi-spectatorship: the player on the left is blocking piñata from entering the wave to allow the other players to manage their workloads.

Furthermore, the physical positioning of players in the play space makes it difficult for the players to communicate along the entire line of play. This design approach, partnered with social boundaries limit the extent to which players verbally coach one another. Players did, however, comment on taking moments to strategize whilst they were playing, with a few pointing towards potentially working against their teammates in a form of dark play. Dependencies between players were an active design choice by the designers and aimed to promote collaboration, varying play experiences across the three player positions (and thus promote players to play again, trying out a different position) and to encourage observation, coaching and strategizing. Social media respondents who played the game in a play party context do not acknowledge issues with dependencies, however, in a focus group setting, some players, as discussed above, describe dissatisfaction or frustration at the reliance upon other players. It may be the case, that there is a difficulty in verbalizing the actions required in order to carry out in game tasks (as suggested by some focus group participants) and that communication within a physical game such as *ODLV* is subtler than explored within this study, relying less on verbal communication and more on physical and non-verbal pointers, as one social media respondent notes:

> The game functions via cooperation, with a level of abstractness [sic] that boils communication down to a fundamental level; by connecting all players together, the simplified communication is supplemented by body language and non-verbal cuing of one's teammates/fellow players.

This concept of internal semi-spectatorship can be applied to the study of other social play games. *Hotaru* (Isbister et al 2017) for example, requires players to pay particular attention to one another during game play in order to succeed. The players switch between being active (collecting energy) and being semi-spectators: they monitor their fellow player's energy bar, taking action when necessary. *Proxemic Pong* (Muller et al 2014) similarly blurs the line between spectatorship and active play due to the automatic detection of a player in the play space. When the game detects a player, it creates a Pong paddle with which they can play. However, the player can exist on the fringes of perception of the game, neither taking an active play role, nor purely spectating as their presence in the proxemic zone of play causes erratic behavior in the system. This could be seen as a bug in the system or a playful way of exploring the boundary between spectatorship and active play with the system.

The widening of the magic circle through external semi-spectatorship

In *ODLV*, shifting one's weight on the balance board from one side to the other triggers a similar movement of the player-platforms on the screen. Continued reinforcement of physical action in the digital realm, in partnership with the exaggerated scale of the digital and physical play space in *ODLV*, not only contribute to the 'pull' of the game through use of spectacle strategies, but also contribute to the game's increased visibility. Mimetic interface games encourage movement in the player's physical space and create the illusion of uninterrupted movement that initiates in player space and continues in game space: the player's physical movements are mirrored in the game by the player's avatar (Juul 2010). This can help explain the game's popularity, the barrier to entry to the game is lowered by facilitating learning through watching which in turn, enhances the social nature of the game (Juul 2010). A social media respondent expands on this idea, acknowledging the accessibility provided by the mimetic interface:

> As someone who finds game controllers difficult (I never know which button to press) the instinctive nature of the controls meant I instantly had an idea of what to do and had fun working out the finer moves with the whole team.

This accessibility is promoted by expressive design (types of interactions where both the manipulations and the effects are visible to an audience (Reeves et al. 2005)). *ODLV* makes use of these three types of interactions; those which are directly performed on the controller (balancing on the board), the movement of the performers that is captured by the interface (holding hands which enables the circuit, and the shifting of balance on the boards), as well as other movements that are not directly captured by the technology. This last type of manipulation is of particular relevance to the widening of the magic circle and involvement of others within the temporary community, as it contributes to the player's freedom for artistic expression and shifts the focus from the game as system or as artifact, to the game as a performance (Márquez Segura and Isbister 2015; Reeves et al. 2005; Simon 2009; Wilson 2012). *OLDV* allows for purely functional out-of-game movements (re-balancing), purely artistic movements (making interesting body waves), but most often a combination of both (Reeves et al. 2005, p.743). Observations of gameplay at play parties invariably

Figure 3: Players of *ODLV* participating in gestural excess at various play parties

indicate that the players tend to engage in full body movement, "gestural excess" (Simon 2009), and create interesting body shapes with each other, standing on one foot, jumping or stretching out as far as possible, although this does not affect gameplay (figure 3). It is argued that these emergent movements are performed because of *ODLV*'s intrinsic performative nature; the players perform for an audience and for each other in an act of artistic expression that is initiated by the game and encouraged by its social design. Players across the data sets acknowledge that it is as pleasurable to watch the game as it is to play it. Within the data set, there are some references towards gestural excess, within the focus group, for example, some players commented that using their arms and playing with the maracas made the game more fun whilst one social media respondent found "My only 'concern' was that I was unable to just move my legs to control the movement i.e. without shaking the maraca (violently) and every other part of my body." Many other social media respondents however, reference the rhythmic nature of the game where, in play, "Guiding the various piñata-like objects became a focused and rhythmic dance, occasionally disrupted by a small pile-up prompting much hip wiggling and laughter' and in spectatorship, enjoying "when everyone managed to find their required rhythm and carry it across the chain." Play as performance, for some, enhances the spectacle and spectatorship for the audience and encourages interaction between audience members, and between audience members and players.

Witnessing others succeed or fail is fun and exciting in co-located social play, while performing in front of others can diminish the negative effects of playing poorly or making mistakes (Isbister 2010; Lazzaro 2004; Márquez Segura and Isbister 2015). The presence of an audience makes playing more fun as it allows players to show off their skills, act out or gloat, in other words: play to their audience. In turn, spectators can root for their friends, comment on gameplay, shout out advice or try to handicap or trick the players. All these aspects make co-located play more fun for both spectators and players, widening the magic circle, whilst also creating temporary social bonds between players and the audience during the play experience, further promoting the temporary play community.

Therefore, *ODLV* encourages an active type of live spectatorship, in which "the spectator's frame of spectating focuses on their own self in relationship to what they view" (Oddey and White 2009, p.8), in the case of *ODLV*, shaped by either the anticipation of participation, or the embodied knowledge of previous participation. This type of spectatorship is pleasurable and fun in itself, as it enables the formation of a support network/community, it allows for imaginative gameplay, reflection and strategic thinking, it acts as a safe space where the spectators can overcome the intimidation of participation by watching others play, and finally it acts as a tutorial - learning by watching.

The ability for a game (or any experience) to activate spectators in the play experience in this way is proposed as 'external semi-spectatorship.' In social play design, designers can create spaces which enliven the audience with further participative potential whether this be using play as performance to allow spectators to devise strategies about how they would play or allowing them to learn by watching others or inviting them to impact the gameplay through ambient support or direct interaction with active players through coaching and so on.

Within *JS Joust*, for example, active players may choose to use members of the audience as 'human shields' or 'buffers' and thus casts them into an external semi-spectator role - neither truly active nor passive. It can also be a way of inviting spectators to activate themselves within gameplay. Such a mode can be seen in *Clash Royal*e (Supercell, 2016)

for example, which although not a co-located social play game, offers interesting affordances to external semi-spectators using the fireworks to congratulate players they are watching and also, in a form of dark play, to give one player hints on the other player's strategy as a form of competitive edge.

DISCUSSION

Ola De La Vida has proved to create interesting social dynamics between players and audiences acting as a social object: activating relations between individual players but also between the players and the audience. It does this through scale, conviviality, play as performance, dependence in game design and by orchestrating emotional contagion. These design elements lend themselves well to co-located social play and the social contexts of a play party and, it is proposed widen the magic circle around the game.

Many games have qualities that make them social objects, whether through inviting active participation of multiple players, through inviting spectatorship through performance as play, or through inciting intrigue through unconventional controllers, play styles or content. *ODLV* was designed to be staged and intended from the onset to enhance spectacle and social potential as widely acknowledged by social media respondents, including: "*Ola de la Vida* was instantly eye-catching and inviting, commandeering a large play space with unusual controls." Enhancement of social potential, however, is most commonly applied to games which foster unusual physical control systems, are multiplayer or which are convivial in nature. Co-located games can (and often do) embrace performance as play, using physical movement to blur the boundaries between the player and the spectator creating a form of external semi-spectatorship. This may be achieved through scale and staging, as in *ODLV*, by freeing players from a limited play space (as in *JS joust*), or through physical game mechanics (such as *In Tune*). Supporting spectatorship allows active involvement for the spectator in influencing and shaping the gameplay in subtle but meaningful ways for all involved. The blurring of such boundaries can help to create a cohesive temporary play community driven by camaraderie.

The design of the digital game, although deceptively simple, provides a beneficial rhythm to gameplay which allows the players to shift between active play and internal semi-spectatorship. The rhythm in *ODLV* is driven by in-game dependencies where play is sequentially driven, and players rely on one another physically *and* digitally in order to achieve the goals of the game. Such a rhythm is key to creating connections between players in a multiplayer social play context because it can allow for greater coliberation, exchange between the players, and can strengthen the bonds within a team. For example, within the focus group, one team referred to themselves as a "production line" with a pattern, whilst a social media respondent noted that "Using tactile props allow its players to gradually feel like one fluid entity, even when hitting impediments or particularly challenging portions of the gameplay."

It is often the case that players in multiplayer online games are 'alone together' and although they engage with one another socially, they do not necessarily engage in meaningful play (Ducheneaut et al 2006). Internal semi-spectatorship, where a player is active in the game to some extent, but still has enough distance to observe the needs of others, is proposed as an antidote to the issues of being 'alone together,' allowing for meaningful connections to be made during active game play and in no way diminishes the input of the player upon the play experience. Rather, it provides them with a unique opportunity to appreciate the game play from a distance, to strategize and to explore how to better achieve (or rather, for some, disrupt) their shared goals as a team. Within focus

group testing it is clear that some teams were able to find critical distance and to strategize during gameplay, but the controlled nature of the testing session and social politeness (as acknowledged by the participants concerns over offending someone by telling them what to do) limit the conclusions that can be drawn on this element at present. Further studies in authentic social play party contexts are needed in order to fully assess the potential of this element within *ODLV*.

Semi-spectatorship, as a concept clearly exists but may be enacted by players (internal to the game) to varying degrees depending upon the setting, social relationships and experience levels of each player and may be enacted by the audience (external to the game) in how they interpret, support and strategize in relation to gameplay.

CONCLUSION AND FUTURE WORK

Social play environments are encouraging new approaches to game design which place social interaction at the center of the play experience. The growing number of play party events around the world suggests that these practices are successful in promoting game playing practices as a social activity and are widening the audience for games and play through leveraging social contexts for play.

Co-located social play games exist only temporarily, as do the communities around them. This temporary nature may be beneficial, perhaps inviting them to throw away fears about participation as this is an opportunity not to be encountered again, an invitation to join Huizinga's secret club and become part of something temporary in time and space, but a permanent shared social experience nonetheless.

It is proposed that the social potential of videogames can be enhanced in the design process, considering how gameplay in the digital and physical space can invite spectatorship and audience involvement. It is also proposed that designers can create internal and external forms of semi-spectatorship, to widen the magic circle and promote social interaction and temporary play community formation around a game. Both internal and external forms of semi-spectatorship blur the boundaries between play and spectatorship and aim to widen the magic circle around the game, creating shared investment and meaning between players and spectators in achieving gameplay outcomes. Being part of such a temporary play community is proposed to enhance the play experience for everyone through emotional contagion, camaraderie, and coliberation, creating a memorable experience and potentially promoting more positive connotations around computer games for those involved.

The concept of semi-spectatorship is evident in *ODLV* player experiences and acknowledged by players in their dual role of playing and watching the game and also of trying to learn how to play through watching or enhance the gameplay through in game communication. However, the impact of semi-spectatorship upon the play community as a whole is not wholly clear from research data and requires further investigation in order to fully assess its potential for temporary community creation. Further player studies of social play games in social play contexts are needed in order to fully investigate and formalize the different facets and implications of semi-spectatorship upon the social play experience moving forward. This study does, however, take a small step towards acknowledging the blurring relationships between players and spectators and their relation to the processes of game designers.

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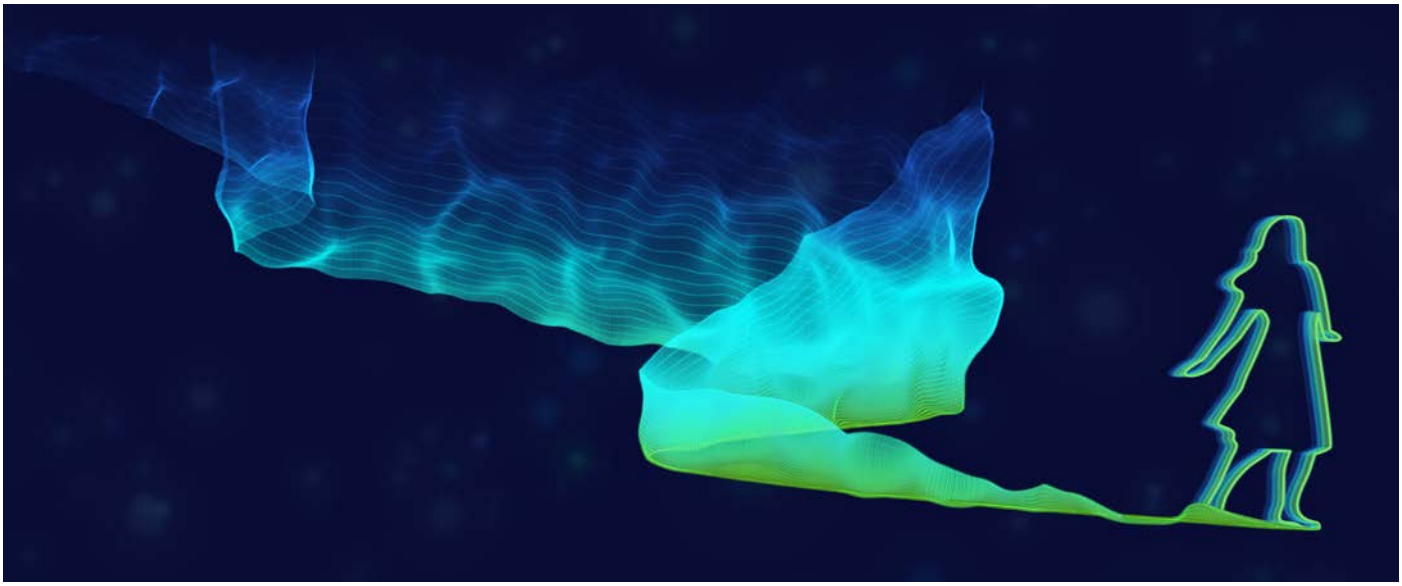
Northern Lights Ceilidh

Playful Digital Interventions in a Scottish Tradition

Lynn Parker and Clare Brennan (2014)



Above: The promotional image for NLC which was used to advertise the event.

1.0 Executive Summary

Northern Lights Ceilidh (NLC) was a one-off event which added a modern twist to traditional Scottish dancing, music and performance and added a digital infusion of technology mediated interactions to proceedings. The event marked the end of an international games competition hosted in Dundee each year, Dare to be Digital (DtbD) inviting the participants in the games competition and the general public to attend. In total 208 people attended NLC, 75 of whom were participants in DtbD.

It is not possible to determine how many of the participants were external to Abertay University. However, 50% of respondents to a survey relating to NLC[1] (the survey was completed by 12% of the total attendees) cited they found out about the event through sources external to Dare to be Digital which could suggest that there were attendees who had no link to Dare to be Digital and Abertay University.

The Ceilidh was part funded by the year of Homecoming Scotland, and thus sought to weave historical Scottish traditions with new traditions in Scotland (i.e. weaving ceilidh, poetry and dance with new forms of design including 3D printed jewellery and interactive technology). NLC was held in a high-tech marquee in Dundee City Square on the 8th of August 2014. The marquee had been used for four days as the site of the DtbD games showcase and was transformed into a dance hall for the event.

NLC aimed to, through digital mediation, provide participants with agency commonly associated with digital media. Participants were able to contribute to the creation of a digital aesthetic which was layered upon the physical ceilidh experience through projection and real-time manipulation of live video feeds. The participants could alter and manipulate their movement to change what happened on screen, co-creating not only the dance

1. An audience feedback survey was carried out by the NLC hosts, DtbD. This was an online survey, sent out after the ceilidh designed to assess the event's success at supporting the year of Homecoming. It was not gathered for academic research purposes and thus cannot be ethically used within this research.

elements of the ceilidh but also the digital spectacle.

The ceilidh was designed Lynn Parker, and Clare Brennan. Ryan Locke provided imagery which was used as the setting for digital animation production by Lynn Parker. A jeweller, Elizabeth Armour, was commissioned to create custom jewellery for the event, a 3D printed brooch and two digital artists, Stuart MacBean and Yana Hristova were commissioned to create an animated 'peep' board with which attendees were encouraged to take photographs. During the event itself, the band Whiskey Kiss called the dances and provided the music whilst a performer recited poetry to open the event. Quartic Llama, an interactive media company were commissioned to create a digital app to promote the event, titled Lightstream (Quartic Llama, 2014).

Lynn Parker led the design of interactive media interventions into the event, the creation of animation sequences and live visuals during the event, developed branding for the event, carried out client facing work with Quartic Llama and collaborated with her colleagues in the facilitation and organisation of the event.

Northern Lights Ceilidh as practice-led-research work offers insight into design approaches to support and facilitate social interaction. The social nature of the ceilidh event provides a template for community creation and the layering of digital intervention provides a basis from which the mediation of interaction through both human and technology mediated play can be evaluated.

The addition of a digital layer to the ceilidh setting provides an extra level of participation in the event, where the participants can not only make the event come to life through participating in the dances but also in their manipulation of their movement to shape the digital visualisations on screen. The experience of the participants of both the ceilidh setting and of digital mediation provides valuable underpinning for the evaluation of these factors through practice-led-research.

Above: Participants taking part in a large group dance in the early stages of NLC.

1.1 Relation to Research Practice

A ceilidh is a traditional ritual event, it is a 'known' quantity to many participants, much like theatre or exhibition and its conventions tend to be known by the attendees prior to the event itself. Thus, many participants attend a ceilidh with preconceived notions of the type of event, type of activities and thus expected behaviour. Participation is central to the ceilidh event, and promoting an event such as a ceilidh prepares individuals to participate. Such participation in the arts is recognised to "contribute to community cohesion, reduce social exclusion and isolation, and/or make communities feel safer and stronger." (Arts Council, 2014).

For those familiar with the tradition of a ceilidh, the role of audience and of participant is clear. For those who have no previous experience, spectatorship, or taking on the role of audience, can help to interpret the practices of the ceilidh because an audience:

... is both a socially constructed practice and a notional position in relation to external and internal phenomena: we become audiences and we understand what we do as audience members because of the traditions that we inherit and adapt, but we also go through our lives taking the position of spectator to the world around us, our own actions in it as well as those of other people. (White, 2013, p.5).

Ceilidhs, therefore, are inherently participative: without the audience taking an active role in dancing a ceilidh cannot exist. In bringing the event to life, the attendees already co-create the experience as, without them, the ceilidh is not enacted.

""I think a lot of the time Scottish culture is kind of thought of as really old and kind of traditional but not in the best sense so its nice to see it kind of being brought to a more modern stage"

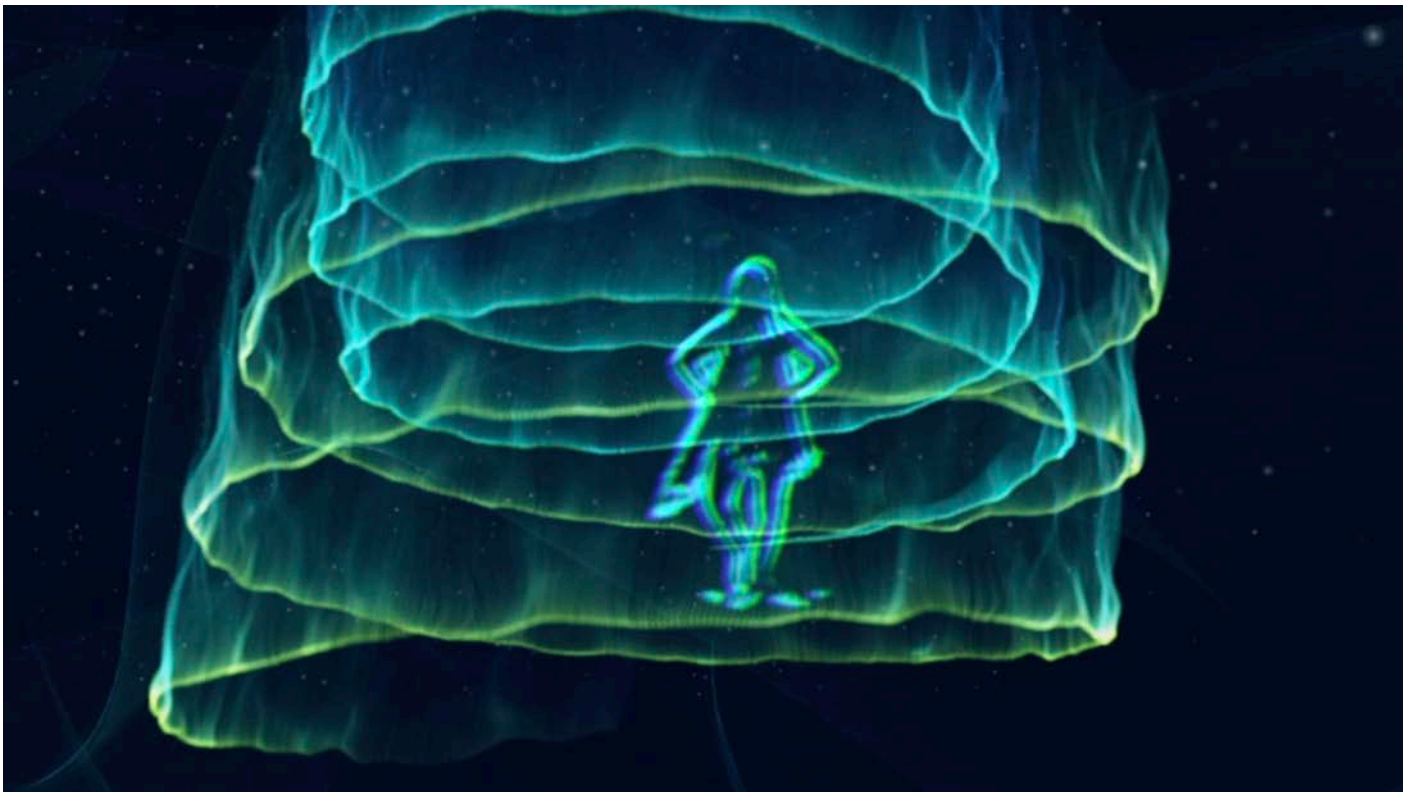
Above: Participants taking part in a large group dance with the live visuals being displayed on the large screen on the dancefloor

Within NLC, however, the designers aimed to add a new level of participation by extending co-creation, providing participants with digital tools which could create abstracted digital embodiments of their movements on a large-scale projection in the dance space. The aim of this digital intervention into the ceilidh was to enable further co-creation of the event, in the physical and digital realms. NLC invited the audience to co-create the event aesthetic through:

Using their bodies in dance to create digital patterns on the screen
Use their voices, feet stomping and the rhythm of the music to influence visualisations on screen
Use their brooches to 'draw' on the screen actively by purposefully changing their movements or passively through interacting with choreographed dance

In these ways, the participants themselves become the medium of the performance (White 2013) and thus the digital reactions on screen were designed to highlight, augment and advance the movements that were taking place in real-time. These effects played with time, delaying, repeating and extending temporal qualities to highlight different facets of movement and create a visual spectacle for those dancing and for those who were taking a rest and watching the ceilidh.

The ceilidh provides insight into the facilitation of social interaction within an event, using dance. It looks at co-creation of spectacle through inviting active participation in dance and digital visual aesthetic creation through dance. It also examines the role of digital mediation in forming "arena for exchange' where participants may discuss their digital interactions, experiences and what they see (Bourriaud, 2002).



Above: A still from the first interstitial animation showing the 'Mirrie Dancers' Playing in the Northern Lights

Above: Images of the ceilidh band, Whiskey Kiss, performing during NLC

2.0 Research Questions

How can digital media be used to enhance audience participation and the creation of a shared aesthetic for a ceilidh event?

Within a ceilidh setting, how can digital media be used to facilitate or enhance social interaction?

What is the impact of digital interventions on the creation of a sense of community within a ceilidh event?

3.0 Methodology

The project was practice-led, with an iterative design process informing creative and organisational decisions. Early ideas were pitched to the client, Elaine Russell from DtbD, and from there, the look and feel of the project was developed through mood boards, documentation and video tests of potential digital interventions. The client was regularly updated on the design development, planned structure of the event and event scheduling. The band was identified by the client and were also in regular communication with the designers to ensure that the event structure suited their approach to ceilidh events (an outline of the event structure can be found in appendix A of this document). The designers felt the need to respect the ceilidh tradition and looked for modes of digital mediation which complemented the ceilidh rather than changed or modified its behaviour. In staying true to this vision, the core interactive element became by-product of core ceilidh activity; the visuals created by the brooches came into existence through movement and participation in the ceilidh itself and did not require any additional effort from the participants, unless they wished to enact it. In the development process, five forms of digital intervention were designed:

Interstitial animations
LED brooch led interactive visuals where dancers could become the northern lights
Live visual manipulation to augment, highlight and enhance patterns in ceilidh dancing
An animated 'peep board' photo opportunity
An interactive sphere where participants could draw the northern lights with their hands

The interactive visuals and live visual manipulation were core interventions focussed upon empowering the audience to co-create the aesthetic of the event. The

interstitial animations provided moments for interpretation and contemplation. The other two interventions supported the digital feel of the event and provided entertainment whilst participants chose to take a rest from dancing. The animated peep board was created by two arts students and the interactive sphere was designed by the events company Northern Lights, therefore the design of these elements are out with the focus of this document.

Semi-structured interviews were carried out with 5% of the event (the interview guide can be found in appendix B of this document). These interviews aimed to gather focussed qualitative data regarding the audience's role in the ceilidh event, looking particularly at their participation within and awareness (if any) of contributing to the aesthetic of the event and the extent to which they felt like the made connections or formed part of a community through their participation in NLC.

The participants were aged 20-32, and worked in games development, were studying creative arts production or were digital arts academics. All but one had participated in DtbD and therefore, the resulting data was influenced by a range of contextual factors, including their links with other attendees (due to having participated in the competition), their experience of the location for the competition context, and the transitional landmark nature of this event (i.e. the culmination of eight weeks hard work). The interviews were carried out in person or via video call and participants were shown a short documentary about the ceilidh to refresh their memories of the event.

Above: visual manipulation of live video shown behind the dancers as they enjoy a group dance

The interviews were semi-structured, making use of an interview guide to help to shape the discussion of the event. The interviews were carried out almost one year after the event had occurred. The collection of data one year after the event presents issues of selective recall, telescoping and the likelihood of participants to recall the past in light of their present circumstances (Jupp, 2006).

The interviews were transcribed for analysis and were organised, in a matrix by question, to allow direct comparison of participant experiences and identify gaps in the research data (Gray and Malins, 2004). Commonalities across the data set were identified and compared to the intentions of the designer. Further analysis of the data was then undertaken to identify the potential reasoning for these commonalities and the extent to which the digital mediation shaped participants experiences. In analysing the data, it became clear that contextual factors around the ceilidh setting itself influenced participant responses, thus these were further interrogated allowing conclusions to be drawn around the effect of the ritualistic qualities of the event on participation.

3.1 LED Brooch and Live Visuals: Design Approach

A jeweller, Elizabeth Armour was commissioned to design and create 'digital' brooches for the event. These built upon the developing themes of the northern lights and the myths which exist around them. The brooch brief stated that an LED should be embedded within the design to lead the audiences' contribution to digital augmentations within the ceilidh event. The brooch "aimed to capture a movement ...inspired by the beautiful organic shapes of the aurora." (Armour, 2014). Regular meetings were held with the jeweller to review the design, explore the technical development and test out the jewellery with the digital systems which were designed to use the light from the LEDs to create real-time animations.

The animations driven by the brooches were inspired by the Orcadian proverb which believes the Northern lights are spirits dancing in the sky and that "When the Mirrie Dancers play, they are like to slay" which links to the red lichen often found on the rocks by the coast on Orkney. The digital intervention aimed to capture the light emitted from each dancer's brooch and extend this to create a stream of light, dancing across the screen, simulating the northern lights. This effect was achieved by isolating the light from the brooches from a live video feed and extending the time that each frame of light was on screen to create a light stream.

This direct representation of each dance, live and extended on screen allowed for embodiment in the digital realm and opened up opportunities for participant agency for digital representation through physical movement. Participants could choose to alter their movements to identify themselves in the digital realm and alter the representations on screen. Extensive testing was undertaken to ensure the length of each light on screen was such that it aesthetically represented the northern lights whilst not taking up too much

Above: The LED brooches, designed by Elizabeth Armour, awaiting the arrival of NLC participants.

Above: A still image from the first interstitial animation which aimed to introduce the 'Mirrie Dancers.' A performer accompanied this animation, reading a poem inspired by the Northern Lights.

of the screen so that many lights could be represented on screen at once. Two cameras in different locations were planned to be used in the event, to capture different angles and allow further experimentation by participants, but unfortunately, due to technical limitations, only one live camera could be used during the event itself.

The event was structured around four phases: one which aimed to capture the anticipation leading up to the ceilidh, one which celebrated the mythical nature of the event, one which built to a crescendo as the event reached its pinnacle and a final phase which represented resolution and the end of the event. These phases were represented by the passing of an evening, from dusk through to dawn and four interstitial pre-rendered animations were created to mark the transition from one phase to the next. The setting of these animations, night scenes of hill tops, forests, lochs and cottages provided a landscape upon which the participants were able to become the 'mirrie dancers.'

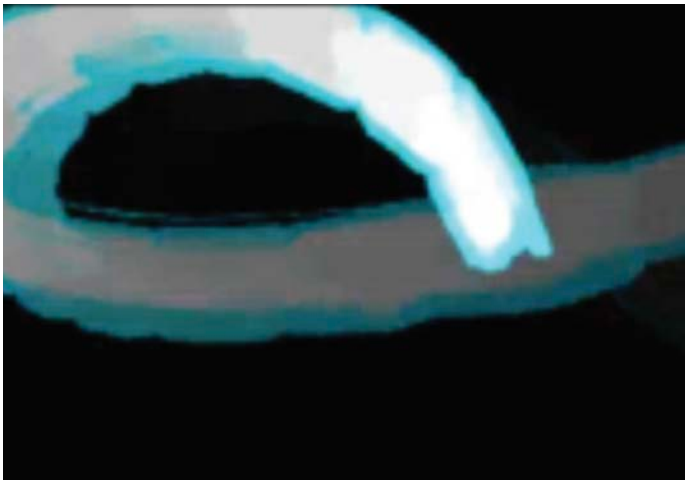
Important lessons were learned during the event as all testing had taken place in the space prior to the setup of the lighting for the event. An individual had been brought in by the events company to facilitate live lighting effects for the evening of the event only, and thus it had not been possible to discuss and test effects fully with these lights in situ. Thus, changes occurred in the visual effect on screen, with aspects of the floor and participant bleeding into the digital light streams. On-the-fly modifications were made to the live feed settings to try to mitigate this issue.

3.2 Live Visual Manipulation: Design Approach

A series of 'live' animations and effects were also designed for use during the ceilidh itself. These visuals made use of a live digital feed and aimed to take the movement of the ceilidh dancers to create visuals which could be projected back into the space. Many of the live animations made use of time distortion in order to

showcase delayed images of the dancers alongside the real-time versions. This created multiple versions of each participant on the screen, highlighting the repeating patterns that exist in the choreography of the dances themselves. It also included visual representation of the dancers, making the potential for digital embodiment more evident to dancers and the audience. Other effects included the manipulation of colour of the on-screen feed driven by the sound input of the whoops, claps and feet stamping of the participants and the noise of the band. These effects added further visual rhythm to the digital embodiment on screen and provided participants with the opportunity to add to the spectacle, if not through their movement, then through their appreciation of ceilidh traditions through voice and applause.

A series of pre-rendered effects (kaleidoscopes created from the northern light graphics, animated creatures and effects from the interstitial animations) were also created to be composited over live footage of the event, in order to link into the narrative structure, set off at the beginning of the event by the poetry reading and developed by the interstitial animations throughout. These were integrated into the live video feed to add flavour and diversity to on-screen visuals and further enrich the narrative element. The animated loops were chosen to support the liveliness of the ceilidh setting and to complement the visual aesthetic defined within the animated interludes. These animations were motivated by sound input, changing in colour, and tempo driven by the music of the ceilidh band, the stamping of feet, clapping and whooping of the ceilidh participants.



Above: A test image of the manipulation of the light from the LED brooches to make a light stream

Above: A professional dancer performs in front of the live visual manipulations

"Well, I had quite a specific experience with someone who had just come along by themselves and that really like lifted my heart a bit because she was just there as was so kind of open and willing to make new friend and to meet new people and I guess in that respect it really felt like a coming together of individuals who were sort of united through this experience. I think a ceilidh kind of does that anyway"

Above: A still image from the second interstitial animation, which aimed to add mysticism to the event.

4.0 Participant Feedback

5% of the audience to NLC took part in semi-structured interviews to inform analysis of the event design. Below is a sample of their thoughts and opinions of NLC.

"I think the NL ceilidh made making connections easier than traditional ceilidhs"

""It is a magical thing of bringing everyone together to celebrate"

"it definitely felt younger if that makes sense, it felt more modern, it felt having the lighting and the interactivity and having projections and things yeah, it felt like a very modern techie kind of area"

"it was quite satisfying when you did have that realisation that the movement you were making was being tracked and interpreted but I think that really the sort of generative visuals that happen whilst everyone is dancing is not really for the dancers, it is for the people that aren't dancing. Because you are so involved in the movement you are making that, you are concentrating on that and so there is a kind of and audience for the audience"

"I think everyone had creative input, they might not have been aware of how they were having an effect, but knew they were having an effect, I knew by being there and taking part and enjoying myself it was contributing to the effect"

"I guess with a couple of the Chinese teams actually cause we really struggled to communicate ...but being able to overcome language barriers and stuff, that kinda stuck out "

"Being there and wearing the pin...taking part in what that was producing, like the lights, that was a big part of the participation that everyone took part in...participating in growing the bonds of international games development as well"

5.0 Results and Discussion

In evaluating the experiences of the NLC participants, the event was seen to foster co-creation and social interaction using the following three strategies:

Leveraging existing participative social contexts and utilising novelty to expand appeal
Novelty as a tool to promote exchange
Accessibility and levels of co-creation through ecologies of participation

5.1 Leveraging existing participative social contexts and utilising novelty to expand appeal

As previously established, in attending a ceilidh event, people have already prepared themselves to participate. Therefore, when tapping into a ritualistic event like a ceilidh, the invitation to participate is naturally embedded. The event naturally filters it attendees, with only those who are willing and/or interested in participating, signing up to attend.

The ceilidh event in itself provides some valuable insight into the formation of temporary communities around a playful intervention, in this case dance. Ceilidh dancing is partner dancing and thus, in order to participate, social interaction must occur. Ceilidhs also, as acknowledged by participants, bring out a sense of responsibility in those who know the dances to share their knowledge with others at the event (33%). NLC was particularly unusual as many of the attendees were international (due to being participants in DtbD) and thus did not know the tradition or the dances.

One participant notes:

I didn't think I held a responsibility to do it [participate]... possibly on the side of the fact that I was one of the people who knew how to ceilidh dance and the fact of getting other people involved who didn't know how to do it, there was maybe a slight responsibility to get everyone who wanted to do it, to do it

Whilst others felt the atmosphere and environment gave them courage to invite others to participate: "If I didn't feel like I was part of a community I wouldn't have dragged other people up to dance." Ceilidhs clearly encourage community development through their playful nature; they are informal convivial affairs and many participants acknowledge either "dragging" others up to dance, or dancing even though they did not know the moves (67%). The atmosphere and festivity of a ceilidh, paired with the ritualistic qualities naturally evokes participation.

The digital mediation of the event, paired with the community contextual factors (the fact that many of the respondents were members of a large existing micro-community at the event) promoted

Above: Behind the screen both designers manipulated the visual distortions and sound input throughout the event

Above: Participants taking part in a large group dance at NLC.

participation. 44% of participants said they were more active and participatory at NLC than they would be typically in a ceilidh event and 56% acknowledged that the digital mediation helped the ceilidh tradition to feel more relevant to them.

5.2 Novelty as a tool to promote exchange

Social interaction is inherent in ceilidh events. Digital mediation within NLC added novelty and a level of spectacle which triggered further conversations as forms of social objects (Engeström 2007). For example, as each participant received their brooch, 44% of participants felt these helped to start conversations. The interstitial animations and the live visuals also evoked social exchange (22%). The abstract nature of the live visuals and interstitial animations, partnered with the brooch as an aesthetic object invited social interaction and "collective elaboration of meaning" (Bourriaud, 2002) as acknowledged by 55% of the participants.

Digital mediation through artefacts within NLC existed on three levels: there were aspects which could be accessed all evening at the participants leisure (i.e. the peep board and interactive sphere), there were semi-permanent interventions (i.e. the live visuals driven by dance and sound and the augmentation of the screen by the brooches) and there were aspects which were shared only once and thus were temporary (i.e. the interstitial animations). The different levels of access imbued some of the artefacts with a more ephemeral quality: the interventions which were not permanently available left the biggest imprint on the minds of the participants, with everyone recalling the brooches, 67% recalling the live visuals and 56% recalling the interstitial animations positively. Very few references were made to the peep board or interactive sphere. The scarcity of access to this material and its novelty went some way to enhancing the imprint NLC left upon participants.

5.3 Accessibility and levels of co-creation through ecologies of participation

The level of digital know-how required to

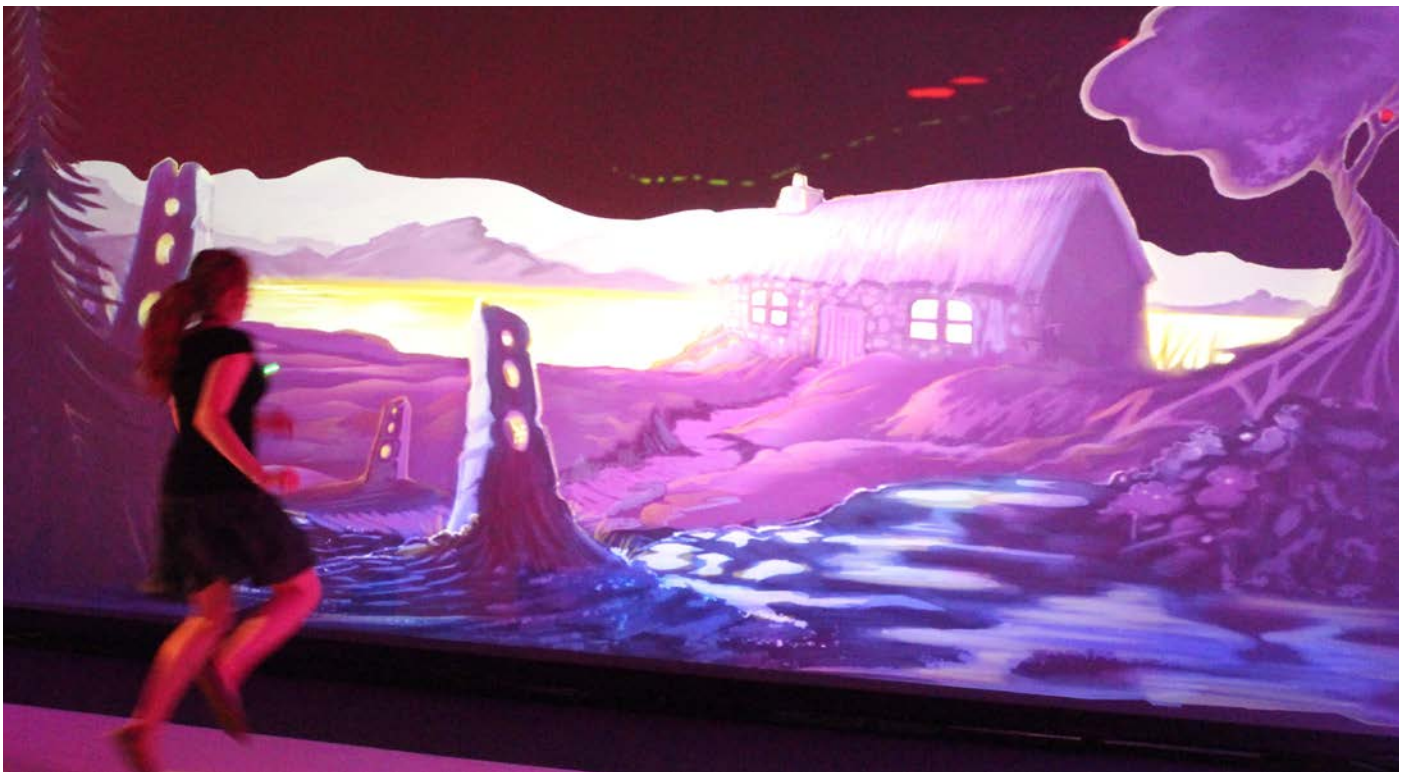
participate in NLC was very low, and thus, there was no barrier to entry for participants. This ensured accessibility for all ages, and perhaps was a key to broadening the audience for the ceilidh whilst not alienating those who may be less comfortable with technological interventions. Lowering barriers to entry when it comes to interacting with technology in social environments is a key strategy to promoting participation and social exchange (Dyce and Fairweather, 2017). The ceilidh did this very well, with every participant being able to engage with the lights and in turn, consciously or otherwise contributing to the digital aesthetic.

The brooch was provided upon entry to the event, with an information card about the jeweller. It did not, however, provide any further guidance as to how it could invite co-creation of the event, and thus, for many, was an appealing item in and of itself. 33% of interview participants were not aware of the effect of the brooch on the live visuals. It was assumed by the designers, that in participating in dances, it would become fairly clear to participants the nature of their influence on the digital screen. For some, this was the case, especially prior or in-between dance sessions. One participant notes:

I do remember we were trying to work out what the little lights were and then somebody walked across in front of us and we followed the trail across the board and we went "oh, that's what it does", and then we were running backwards and forwards a couple of times like small children that we are and spinning that was the point.

Whilst others report their observations of unusual behaviours by some participants drew curiosity:

I remember watching people with the brooches and they interacted with the



Above: One of the participants playing with the light created by their brooch by moving around in front of the screen and watching the trail of light (in green) made by there movements. This occured just as the ceilidh was about to begin.

screen, so I just remember watching people do that and their amazement, it's so cool and then I did it and thought, people are watching me, thinking the same!

In this way, the artefacts, particularly the brooches and their live potential provided a sense of novelty which not only supported conversation and collective meaning making for some, but also encouraged experimentation in participation for others. The novelty of interacting with on-screen visuals using the brooch, however, soon wore off, and 44% of participants acknowledge once they had tried it out, they returned their attention the social and physical elements of the experience. The effect that the brooches made on screen remained consistent for the entirety of the time this intervention was available to the audience and this may have limited the ongoing appeal and engagement. Once it was understood, the design offered no further reason for participants to continue engaging; there was no development of complexity or challenge to keep their attention.

In terms of co-creation and sense of authorship, some participants (56%) were aware that their movements contributed to the on-screen visuals, however, they all acknowledge the complexity of participating (carrying out steps, being attentive to their partner, staying balanced etc.) took their full attention and thus they were unable to interact in the real world and to interact actively with the digital realm simultaneously. The influence on the digital world was most recognised by respondents when they were watching the performances and screen rather than participating in the dances themselves. The spectacle this created was appreciated by the audience, with 56% claiming that it extended and improved spectatorship of the dances:

It [the live visuals] meant people who couldn't dance still had something to look at and appreciate, it was a nice touch and wasn't a factor that was... a gimmick, it joined in with the dancing really well and felt part of one thing rather than something added on to just be flashy.

Therefore, the complexity of a task effects the extent to which a participant can be aware of what is happening around them. Play and the creation of a magic circle echoes this phenomena, to an extent, where the magic circle envelopes players separating them from the rest of the world. This magic circle is most often connected to the creation of another reality (Sicart, 2014), but can also reflect a distancing of players activities outside of play (Salen and Zimmerman, 2004; Huizinga, 1949). The ceilidh therefore presents further evidence of differing levels of participation present within a playful experience - there is full immersion in the experience itself (as shown by the dancers), semi-engagement (as shown by those experimenting with their brooches) and spectatorship (as shown by the audience). With NLC, it is clear that the spectators are in the best position to fully experience the aesthetic which is being co-created between the designers and the participants. It is by being 'passive', they are able to appreciate yet not contribute to the spectacle.

Making the co-creation of aesthetic a

by-product of the dance experience promoted accessibility but also lowered audience agency. The complexity and dependencies of ceilidh dancing enhance social interaction between partners, and promote inter-partner sociability, however, it leaves little attention or agency for participants to actively shape their movements away from those integral to the dances. Therefore, in participating in the ceilidh, it is not possible to actively augment the digital representation of movement on screen.

5.4 The Ceilidh in General

The ceilidh demonstrates potential for learning about the creation of temporary participative and playful communities. Analysis NLC suggests a ceilidh enhances participation and social exchange in the following ways:

the need for varying levels of partnership to take part in dances (Dancing as social object)
A sense of responsibility by those who "know" the dances to pass on the tradition (insiders induct outsiders)
Embedded celebratory tone and ritualistic meaning
A need for different levels of participation to maintain energy
Facilitation of participation by an active host - the Ceilidh Band (scaffolding for participation)

6.0 Dissemination & Impact

Preliminary findings from user feedback were presented looking specifically at the role of the audience as co-creators of an experience, at the Society of Animation Studies annual conference in Canterbury in 2015. The paper was titled Tradition meets Technology: Audience Participation in the creation of a Digital Mediated Ceilidh and was attended by approximately 48 people. Feedback from the conference presentation suggested that the audience

Above: One of the professional dancers performing in front of the live visuals inspired by interstitial animation two.

Above: Two of the professional dancers performing in front of one of the pre-rendered/live visual mixes

could see potential social benefits in designing digitally mediated interaction in a range of settings, especially in the realms of games for change or community arts working with participants who may have social disorders.

A promotional trailer for the event is available online and has received 288 views (Abertay TV 2014b), and a short event 'documentary' has had 383 views (Abertay TV 2014a).

7.0 Conclusion

NLC provides useful insight into the use of digital mediation to enhance the appeal of traditional events, such as a ceilidh, to new audiences. All respondents recognised the digital mediation of the event to some extent and for those to which a ceilidh did not usually appeal, claimed that the digital mediation helped to enhance the appeal of the event to them. Some also acknowledge that the brooches and their interactive quality encouraged them to participate more or that, in fact, they were more active at NLC than at previous ceilidh events due to the range of participative options provided.

The digital mediation of the ceilidh used novelty to promote social exchange, and this was fairly effective within the small sample interviewed. The novelty, however, of the interactive elements did not keep participant attention for long, potentially due to this being an augmentation to the 'main business' of ceilidh dancing. Participants appreciated the digital elements, but they seem to have been a small part of the larger whole that made the experience fun and memorable.

Looking back at the social interaction elements, it may have been beneficial to have used the brooches for more than just visual manipulation of the aesthetic. The could have promoted further socia-

Above: Participants receiving their LED brooches as they arrive at the start of NLC.

bility through 'organising' social interaction. For example, using the colours of the LEDs as a way to encourage meeting a new dance partner. The speed and attention needed for ceilidh dancing also leaves little space for attention to digital manipulation, therefore, it may have been beneficial to empower those who were spectating to contribute to the spectacle in some way. For example, perhaps placing cameras on each table to capture live feeds from the audience or placing 'visual mixers' in the audience space which could shape the visuals on screen would have provided further agency and clearer co-creation of the event aesthetic.

These limitations of digital playful interventions design have provided valuable practitioner insight into the use of digital mediation to encourage social interaction and community. The mediation of social interaction within NLC was very subtle, and moving forward, as a practitioner, more direct forms of social interaction through digital mediation have been explored. For example, within the practice-as-research work Ola de La Vida, digital mediation requires players to physical contact for the duration of the game. This physical contact mediates their ability to play the game and draws attention to their co-players through touch. It has also been recognised by participants in enhancing the team aspects and conviviality of the play experience.

In terms of the creation of a community, all NLC respondents made it clear that they felt they were part of something larger, however, there are a range of reasons reported for this, including the nature of ceilidhs themselves, the existing community around DtbD, the feeling of a shared experience and the digital mediation. New playful behaviours emerged from participants within the event which suggest the development of a temporary community. Such behaviours include the addition of high fives in large group danc-

es and an impromptu dance off as the culmination of the event. A mix of the nature of the ceilidh event in and of itself, the contextual and social factors of DtbD and the shared experience of participating in an event over the course of an evening seem to have been key to bringing the participants together and creating comfort and confidence for such new behaviours to emerge.

The ceilidh as a form also provides valuable insight into community creation, and study of this event and the interrelations reported by participants both in relation to their existing relationships and the formation of new temporary ones, helps to showcase techniques for enhancing social potential and temporary communities around a playful artefact or event. Further study of these elements within other ritualistic beyond NLC may provide transferrable techniques for community development in temporary events (For example, see Benedetto, no date).
The findings of this research are problematic for several reasons: the data sample for this study was rather small in relation to total attendees; the time between the event and the data collection was quite large and thus makes its reliability questionable; and the focus upon participants who were emotionally invested in the event due to it marking the end of DtbD and thus being a time of transition in their lives. However, the data was collected with issues of recall considered in data design (Jupp, 2006), has been analysed and presented with complete transparency, acknowledging these limitations. It is believed, however, that the results of this study provide insight into understanding the success (or otherwise) of the design techniques of playful artefacts and the development of communities around ceilidh events and around NLC in particular.

Above: A photograph of the dance-off which emerged between the professional dancers and the participants of NLC.

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Appendix A

Northern Lights Ceilidh: Event Structure

Northern Lights Ceilidh Running Order

Sunday 10th August, 8pm – Midnight

PLAN - Panoramic Screen / Live music / Recorded Music / VJset / Performance

8pm – 8.45pm Music: Pre-recorded Scottish ambient music
Audience/guests: People arriving at ceilidh
Visuals on panoramic screen: Sunset and Outdoor party being set up (motion loop).
Animation number 1

8.45pm-9pm Music: Pre-recorded Scottish ambient music, changes to up beat music when animations starts
Audience/guests: Watching, buying drinks, settling in (not yet dancing)
Visuals on panoramic screen: Merry dancers/northern lights. Animation number 2
Additional performance: Poetry reading (starts at 8.45pm) then moves in to animation

9pm – 9.45pm Music: Live Ceilidh music
Audience/guests: Dancing!
Visuals on panoramic screen: Atmospheric VJing (using LED accessories)

9.45pm-10.10pm Music: Pre-recorded Scottish upbeat/quirky music
Audience/guests: Watching, buying drinks, resting
Visuals on panoramic screen: Ambient motion loop (approx. 20mins) Move to forest scene, abstract/surreal visuals(approx. 3mins 30secs) Animation number 3

10.10pm – 11pm Music: Live Ceilidh music
Audience/guests: Dancing/watching professional dancers?
Visuals on panoramic screen: Atmospheric VJing (using LED accessories)
Additional performance: Professional dancers

11pm-11.20pm Music: Pre-recorded Scottish upbeat/quirky music
Audience/guests: Watching, buying drinks, resting
Visuals on panoramic screen: Ambient motion loop (approx. 15mins) Move to abstract fast paced visuals, movement/fighting (approx. 3mins 30secs) Animation number 4

11.20pm – Midnight Music: Live Ceilidh music
Audience/guests: Dancing!
Visuals on panoramic screen: VJing then move to Sunrise. Animation number 5

Appendix B

Northern Lights Ceilidh: Semi-Structured Interview Guide

NLC Participant Interview Guide

1. Before the Northern Lights Ceilidh could you describe your experience of the traditional ceilidh setting and your feelings attached to it?
2. So how would you describe the atmosphere of a traditional ceilidh?
3. And what would you say are the key features of a ceilidh?
4. Where are you from?
5. As a non-scot did you have any preconceptions of the ceilidh?
   OR
   So, as a Scot, do you have any kind of attachments to the whole tradition of the ceilidh?
6. Do you feel like the ceilidh is part of your cultural heritage?

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7. Could you just describe what you think the Northern Lights ceilidh was?
8. The ceilidh could be called a ritual coming together with conventions and preconceptions?
9. How, if at all, was your experience of the Northern lights ceilidh different to a traditional ceilidh?
10. What do you remember best about your experience?
11. What do you remember about the atmosphere of the ceilidh?

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12. How important were the band to the overall experience?
13. How aware were you of the myths about the northern lights that the ceilidh drew from?
14. Did the event have a sense of narrative to you?
15. As a participant, do you feel like you made connections with people at the ceilidh?
16. Can you tell me a specific instance of an interaction with someone at the ceilidh which you remember? Why do you remember it?
17. Did NLC make you feel part of a community?
18. What stood out to you most, in your feelings of the event or in your interactions with people?
19. What were your experiences of the digital mediation of the event?

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20. Can you describe the different modes of activity you remember being part of?
21. What are your feelings about these activities?
22. What do you remember about participating?
23. What do you remember about watching?
24. What do you remember about the space?

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25. Previous experience shape your understanding of the space?
26. Did it live up to your expectation? Why?
28. What do you remember about your sensory experience?
29. Did the ceilidh feel interactive to you? If so, in what way?

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30. Did you feel like you had any responsibility in order to create the spectacle of the event or to bring the event to fruition?
31. Would you want responsibility as a participant?
32. Did you feel like you had any creative input into the spectacle? Do you feel that you played an active role in contributing to the event?
33. is it possible for you to be participant and witness in an event?

Appendix B: Revision Process of the Model of Participation Presented in Publication A

1.0 Introduction

Publication A presents a model of participation design informed by the work and practice of six expert interviewees who work in computer games event facilitation. The publication drew only from a sub-set of expert interviews, focussing specifically upon video games in particular due to a specific journal call for papers. Eleven expert interviews were undertaken in total, and five were omitted from this paper due to the non-digital or lack of focus on video games within their practice. However, these five practitioners design and facilitate playful experiences within games, the community and the arts and thus, in the context of the thesis research, are deemed to have valuable experiences and insight which could enhance the robustness and validity of the model of participation presented within publication A. Therefore, the data set has been revisited, analysed consistently with the methods used in relation to the original data analysis for publication A and the model of participation has been revised as a result of the findings of this process.

In revisiting the interview data set which contributed to the formation of the model of participation presented within Publication A, a great deal of supporting evidence for the existing design considerations was identified within the five-additional expert interviewees' practice. The experience of these practitioners also highlighted additional community needs and design considerations which were not previously fully supported by the model of participation.

In order to report the findings of the additional data analysis and development of the model of participation in light of the expanded dataset, the following text draws from the original paper structure, showcasing the amendments and additions driven by the additional work and its analysis in the context of the entire data set. This appendix, therefore, is set out to showcase how the needs of the communities which attend playful events have changed in relation to those presented in Publication A. It then presents the revised framework, providing an

overview of the additional design techniques and a further design consideration driven by the expanded data set. These additions are presented and contextualised with examples from the facilitator's experiences of working with diverse communities. This appendix then reviews the implications of this revised model upon the impact of playful participatory events and concludes with discussion of additional perspectives in relation to the issues presented by play participation facilitation.

It is worth noting that the expanded data set means that the focus of this revised model is not solely upon social play, but on playful social events more broadly, and includes study of events which are situated more so in the community or in the arts than in play. However, all of the events are participatory and playful in their own ways and thus, the experiences of all the expert practitioners are deemed to provide valuable contributions to the development of a more robust model of participation design for playful experiences.

2.0 Changes to “Needs of Communities”

Analysis of the interviews presented a fifth needs driven by the community that facilitators need to consider in facilitating participation: supporting unpredictability in participation. This additional community need was evident not only in the expanded data set but was corroborated by practitioner data across the full data set and therefore is seen to be a transferable consideration for participation design regardless of the specific event at hand. The full revised set of five community driven considerations can be defined as follows:

- Catering to and supporting the confidence levels of attendees is a common consideration for facilitators, regardless of community. Confidence levels seem directly connected to the amount of knowledge or experience an individual has around an event and whether they are attending in a group or alone.
- Preconceptions and negative stigma around games is a significant issue for facilitators in relation to general community participation. Out with game making and playing circles, games are often still associated with negative connotations about their content, the

people who play them and who make them. These connotations act as barriers to entry for expanding participation.

- Social play events present models of value in the work they select and promote to both professional and general games audiences. Such curation, however, can also be seen as gatekeeping, creating tensions within professional games communities in terms of their place within a curated 'image' of games development. The systems of value promoted by such events can enhance or limit participation by professional communities.
- Social play events tend to develop a 'core community' of regular attendees as they become more established. The core community differs across each event within this research, however, a distinct tension is apparent between the two different types of community identified: the professional and the general community. The needs and interests of these groups differ in complexity, accessibility, and participation levels. Accommodating such diverse needs to support participation presents significant programming challenges.
- Every participant will have a different experience of an event, which is shaped by their personality and the immediate reactions they have to invitations to participate. People will also have different reasons for wanting to participate (positive and negative) which also shapes their level of participation, buy-in and attitudes. This can motivate them to participate in different ways and also contribute to the event to different levels. Facilitators need to embrace the unpredictability of participative levels and consider the level spectatorship through to participant led design they can accommodate within their programme.

3.0 Changes to the Model of Participation

The expanded dataset offered additional support to many of the claims made within the original model of participation which helps to further validate its claims. The interview data also provided different perspectives in relation to the design and facilitation of some of the existing techniques promoted within the model. As a result, three of the four original design considerations have been updated with additional content.

For the balance of ‘comfort and discomfort’, additional insights were provided in relation to the support of transformation and accessibility. For the ‘niche and mainstream’, further techniques to tackle preconceptions of an audience and methods to enhance social potential were identified. Within ‘insiders and outsiders’, further insight was also provided in relation to the creation of scaffolding which aids newcomers in joining an existing community.

For two of the original design considerations, further new techniques, which had not been previously considered, also presented themselves and thus provide further tools for a facilitator to apply in their support of these conflicting interests. Within ‘comfort and discomfort’, a need to balance participant *safety with designed risk* is discussed, particularly in relation to the potential to evoke transformation. Techniques for exposing *commonalities* within social groupings are also presented as additional factors which can provide comfort and develop trust in a social context. For ‘curation and gatekeeping’, an additional technique is also added: *value promotion*. It builds upon *value systems* in terms of the facilitation of an event and its perceived qualities but is subtly different in that it seeks to find ways to make the value of participation clear to the participants to enhance promotion, appeal and participation.

The additional five interviews also highlighted that agency takes a core role in the facilitation of participation, and although this had been previously acknowledged within the framework, it was deemed, to have been presented as too minor a consideration. Therefore, a fifth competing interest, inspired by the identified unpredictability of participants detailed by the community needs section of this appendix, is added to the framework: ‘facilitation and agency’. This fifth consideration involves the fine balance of providing an attractive, appealing and satisfying programme of events for attendees whilst also supporting the unpredictability of their reasons to attend, their interests, their levels of participation and levels of engagement. To do this, it is proposed that the event programme is designed to support unpredictability and that appropriation be supported where possible. The design of ecologies of participation has

also been moved to sit within this consideration due to its link to supporting unpredictable participation. The revised model of participation design is presented in table 16.

Consideration	Associated Design Techniques
Comfort and Discomfort (*confidence* to expand perspectives)	Hospitality and atmosphere Transformation* Accessibility* Commonalities*
Niche and Mainstream (*legitimacy* to expand audiences)	Preconceptions* Leveraging social contexts Enhancing Social Potential*
Curation and Gatekeeping (*diversity* in space provision for participation)	Value Systems Transparency and Diversity Value Promotion* Safety and Risk*
Insiders and Outsiders (*Scaffolding* to support community expansion)	Balancing needs of diverse communities Scaffolding to promote transition*
Facilitation and Agency (*Unpredictability* as a tool support participation*)*	Programming for Unpredictability* Ecologies of Participation Supporting Appropriation*

Notes: The underpinning community needs are presented in italics. * denotes new contributions to the framework

Table 16: Revised model of participation design with additional detail of applied design techniques.

In the following subsections, the additions to each design consideration are discussed with examples from the practice of the expert interviewees.

3.1 Comfort vs discomfort

Invitations to participate were discussed, in order to enhance accessibility. Emma Bearman (2017) makes use of known objects which people know how to interact with in order to make participation easy as a form of readymade: Lego, clay, hula hoops, etc. are used which can be picked up and played without instruction. Parallels can be drawn to Andrew Dyce and Craig Fairweather's (2017) approach of creating simplified control systems for video games, but Bearman takes this one step further, leveraging participants previous experiences and knowledge as a gateway to participation. These sorts of items can be an entry into participation, which can lead into supported interaction with other items which require more of creativity or self-direction (e.g. cardboard). For such items, the provision of some pointers, but not outright direction towards play can be provided. Such open invitations and gentle nudges facilitate active participation and agency (Bearman, 2017).

The importance of tone and atmosphere was further emphasised within the expanded dataset (Poulsen, 2017) as was the close link between trust, comfort and confidence in creating a sense of belonging and leading to potential transformation (Bearman, 2017; Farr, 2017). Play and participation is deemed by some practitioners as an ideal route for transformation due to its ability to shift perspectives during play which then draw the player's attention to deficiencies in their everyday life (Bearman, 2017; Quack, 2017). For Quack (2017) play allows players to create meaning which often leads to "discovering needs that you have." In some cases, the route to transformation is helping the group of players to see the link between themselves and the matter which is the focus of the participative situation, this can be achieved by drawing the focus from the community itself (enhancing buy-in, relevance and building commonalities in the group) (Bearman, 2017; Farr, 2017) or by working with the group to see value in the focus for themselves and collectively (Farr, 2017).

Exposing commonalities through participation can also enhance a sense of belonging (Bearman 2017; Farr, 2017; Poulsen, 2017; Quack 2017). Play is able to showcase commonalities in a variety of ways, through social exchange (Bearman, 2017; Thompson, 2017), non-verbal communication (Hayward, 2017), play styles and approaches (Hayward, 2017), and from being facilitated from the needs of the players in the first place (i.e. beginning a dialogue and developing activity from that dialogue) (Bearman, 2017; Farr, 2017).

Another approach to both identifying commonalities and potentially enacting transformation can be recognised in the relationship between play and reflection (Farr, 2017; Poulsen, 2017). Providing spaces for reflection can help to integrate the participative experiences into learning through making sense of the experience. Farr (2017) utilises de-briefs after the culmination of her work in order to support people in making sense together. This space allows them to share what they experienced in the work and collectively make sense. It also, for the facilitator allows shifts in relationships to be seen, for example, strangers bonding through shared experiences or close friends releasing new things about one another. Benedetto's model of transformation (no date) promotes such approaches to supporting a participant after a transformative experience: helping them to step out of the magic circle and leave unresolved tensions behind and following up with participants after the event. In a temporary social event such as a festival or performance, it is not necessarily possible to follow-up or even make contact with participants, but the potential for scaffolding to support people in stepping out of the magic circle and making sense of their experiences is clearly possible. Counterplay also recognises the importance of participation and reflection, requesting that all contributions for workshops and events at the festival combine a mix of the two (Poulsen, 2017). These different models of participation not only fall into helping to identify commonalities but also into ecologies of participation.

3.2 Niche and Mainstream

Within the niche and mainstream, much of the expert interviewee discussion provided subtle additional considerations for tackling preconceptions and enhancing social potential.

Within the original framework, the focus on preconceptions related to the stigma attached to videogames as a form. In expanding the dataset beyond video games into play more generally, new issues in relation to participant preconception were presented. Participative events are imbued with a sense of expectation by the participants, this can be seen as a call to action (Farr, 2017). Events which require high levels of participation can automatically filter attendees for which the current invitation may be too intimidating (Poulsen, 2017). For those who buy-in and sign up, the expectations can either motivate them to participate fully or can cause dissatisfaction is an event does not live up to the preconceived notions they formed about what the event might be and what it might entail (Bearman, 2017).

Facilitators, should, rather than trying to appeal to all audiences in one event, consider how different types of events can diversify audiences and enhance participation (Poulsen, 2017). The filtering effect of invitations was previously acknowledged in the model of participation (i.e. the way the event is promoted beforehand, the use of safe space policies etc.) (Dyce and Fairweather, 2017; Pilia, 2017) in attracting an appropriate audience and developing appropriate levels of participation within an event. The need for different kinds of events for to suit diverse participants is currently acknowledged within the 'curation and gatekeeping' consideration of the model of participation, and the experiences of these practitioners further support the model's promotion of a need for a diverse ecosystem of events.

Pilia (2017) acknowledges, however, that attendees will make their own image of the event in their minds, and it is not possible to reshape these through marketing information alone. Dyce and Fairweather (2017) and Pilia (2017) acknowledge that many of their participants report that the experience they have at an event is not anything like what they had imagined. People form preconceptions based upon many factors (i.e. previous experiences, their interpretation of the promotional material etc.) and it is difficult to tackle these through promotional text alone. Word of mouth is promoted by some as the best way to accurately communicate the embodied participative experience from one past attendee to potential new attendees (Dyce and

Fairweather, 2017; Pilia, 2017). The participants of an event who found it satisfying can become cultural intermediaries in a way, promoting value to their networks and propagating the event.

Participants are also trained to expect delivery of a service when they attend an event (Bearman, 2017; Quack 2017). This is the case with festivals, cinema, theatre and many participative events which are led by a facilitator. Within the research data set, participation is largely delivered through the provision of a festival programme which creates a "possibility space" (Spector, no date, cited in Squire and Jenkins, 2002) for the attendee to choose from. This possibility space is designed and constrained (in that there are only so many options to choose from) but also allows some agency within these constraints for the participant to shape their experience of the event to suit their interests. This, like cinema or theatre, is an accepted model of participation. Open space models (Bearman, 2017) or a barcamps (Hayward, 2017) disrupt these approaches by turning the programming of the event, event content and delivery over to the participants. Playbox, for example, utilises an informal open space approach where participants are able to shape and design their participation based upon their own interests. The difficulty with Playbox, in comparison to the other events within the dataset, is that the participants 'happen upon' the Playbox, rather than them signing up to take part in advance. Their curiosity draws them in and invites participation. As discussed within the accessibility section of comfort and discomfort, readymade objects and subtle cues are provided to invite participation. Tensions present themselves, however as the level of agency required to participate in the possibility space of Playbox is much higher than a participant might typically expect and thus, framing and making this model clear to attendees often takes a number of days of perseverance and encouragement from the facilitators due to pre-conceived notions of experience as "service" (Bearman, 2017). Bearman believes that developing such agency is key to transformation, but that extended engagement over weeks and potentially months is required to develop and build confidence around agency.

Game design techniques can also be used to enhance social participation: the creation of tensions, conflicts and dependencies between participants within a safe magic circle can lead

them to interact in order to achieve the goal in the play situation (Thompson, 2017). The creation of friction is core to game play design (Bateman, 2009) and could be applied to an event setting, in the creation of risk: This may be in the form of increasing levels of participation and complexity being required over the duration of an event (Poulsen, 2017), the handing over of agency for participation to the participants (Bearman, 2017) or the creation of experiences which challenge their preconceived notions or understanding (Farr, 2017; Poulsen, 2017). Risk can be utilised as a tool, once comfort and trust has been established, to unlock social interaction between people and potential promote transformation. It is important to gauge the level of risk, however, as if it is too high, it can turn participants into spectators within a participatory event (Farr, 2017) thus the facilitator needs to carefully consider the balance of comfort and risk in designing ecologies of participation.

3.3 Curation and Gatekeeping

Within the expanded dataset, no new light was shed upon issues of curatorship and gatekeeping in relation to social participation, however, subtle diversifications of the term value emerged. When reviewing the entire dataset, it became clear that value promotion relies not only on the reputation of the cultural intermediary but also relation to the invitations made by the facilitator to their audiences. Value promotion is thus presented for discussion within the framing of the event facilitator as a promoter of value, but also has close ties to preconceptions, the design of accessibility and ecologies of participation.

The cultural intermediary aims to promote value through the work they select to showcase/facilitate. They also, however, need to, in order to enhance participation, ensure that these audiences recognise the value in the work for themselves, so that they will attend the event. Accessibility techniques such as leveraging existing social contexts using spaces and appealing social settings as value to attract a diverse audience (perhaps those with no/limited interest in video games), upon which video games add value in the experience (Dyce and Fairweather, 2017). The aim of this approach is to diversify and expand the audiences around video games as a form. When expanding the study into play more generally, the promotion of

value of experience becomes more important. Attendees need to understand why they should come along to an event, and thus techniques to promote value include making the potential for a new experience clear to the audience (Farr, 2017; Poulsen, 2017), developing curiosity about what the experience is (Bearman, 2017) or similarly excitement and anticipation around the experience (Farr, 2017) or perhaps providing a challenge (in a safe environment) (Thompson, 2017), or an ability to participate in a community of like-minded individuals (Hayward, 2017; Poulsen, 2017). Play is also a safe space within which people can experiment with their personalities (Hayward, 2017) and can do things which they would not dream of in the real world (Farr, 2017; Thompson, 2017). Promoting such aspects prior to an event can help to pique the curiosity of a participant, give them a sense of value or worth in participation and in turn draw them to attend the event. This promotion of value, thus, depends a great deal on the marketing and promotion of an event, which, as previously discussed is problematic in itself. Promotion of value, however, is discussed in relation to the curation and gatekeeping within this model rather than in comfort and discomfort or niche and mainstream, because, the cultural intermediary in this consideration must, in deciding their curatorial frame for their event, also questioning and determining the value promotion and its implications for participation.

3.4 Insiders and Outsiders

In considering tensions between a 'core' community and newcomers to the community, the expanded data set provided further consideration of issues of cliques and also the use of online communities. Bearman (2017) believes that the facilitator of an event must manage social interrelations and thus is responsible for minimising clique formation and also managing dominant personalities and their potential to accidently exclude people. These issues are particularly clear in small communities which gather around a space (such a Playbox) but would be much more difficult for a facilitator to actively manage in a larger setting (Such as at A MAZE. / Berlin, Curious Pastimes events or Now Play This). The scale of the community thus impacts the level of influence a facilitator can have on interpersonal dynamics, beyond the design of spaces to limit cliques from acting as a barrier to participation for others (Hayward, 2017).

Online communities were promoted within the sub-set of data by only one participant as useful for aiding community development. Online spaces can aid the integration of newcomers, motivated by the community themselves (Thompson, 2017). The Curious Pastimes (CP) community uses online spaces to welcome newcomers by sharing experience, knowledge and inviting them to meet in person within the actual play situation. (Thompson, 2017). This platform is maintained by the CP organisation, but the support and invitations come from the community themselves and their internal motivation to improve the experience for one another. In this case, it is clear that an event supporting an existing core community can aid the integration of newcomers into the event using tools out with the event. Such expansion of community driven by, but existing separate to an experience has been previously studied around online communities (Pearce, 2011). The transferability of this case is difficult to ascertain however, as the narrative and game play driven world of CP events is an outlier in the research data set.

Thompson (2017) promotes further concrete techniques for welcoming newcomers to an existing community, including an induction process so that the can actively the established play situation and an apprenticeship scheme for facilitation, where participants can shadow other facilitators and slowly take on more responsibility in delivering the event. CP events rely on large teams of people to operate; the team needs to be open to welcoming new volunteers and participants into facilitation. Again, this differs greatly from the majority of the other events studied within this research, which rely predominantly upon one individual as the 'face' of the event. Useful conclusions, however, can be drawn from CP in terms of potential routes towards lessening the personal burden on an individual through developing agency in a group of core dedicated and engaged volunteers to aid in delivery.

3.5 Facilitation and Agency

An event facilitator will be motivated to run an event for a range of reasons, as discussed within Publication A, under the curation and gatekeeping consideration. These motivations may be

community related or they may focus on promoting a form, diversifying audiences or celebrating makers. The existing model of participation also promotes, when programming an event, ecologies of participation are promoted to provide diverse invitations to suit the needs of the diverse audiences in attendance. The expanded data set further supports concepts of ecologies of participation for diverse communities (Bearman, 2017; Farr, 2017; Poulsen, 2017; Thompson, 2017).

In planning programing, facilitators need to acknowledge that participants attend for many different reasons and thus, that level of participation, enthusiasm and openness to the experience will differ from participant to participant (Bearman, 2017; Farr, 2017; Poulsen, 2017). This is true of all communities, temporary or otherwise. Wenger, McDermott and Snyder (2002) identify that in a community of practice, there will be "three degrees of community participation": the core group, the active group and the peripheral. The core group is often the smallest and actively participate, often taking leadership roles as the community develops. The active group attend regularly and participate occasionally but to a lesser extent than the core group, they make up 15-20% of the community. The peripheral community is the largest portion and tend to spectate rather than participate. They may not participate more due to a feeling of lack of credibility in the community, or a lack of time to be more involved but are learning from and growing through observation of the core community (Wenger, McDermott, Snyder, 2002, p.56). It is also possible to shift between these degrees during participation in the community.

In events, similar behaviours can be identified, and facilitators must, in planning programming, support this unpredictability balancing facilitated programming with participant agency in order to further enhance participation in the event and lead to more meaningful experiences for the participants. Poulsen (2017) links participation to power, claiming that if:

> People don't actually have agency to change the situation and the experience, there's usually not a lot of ownership. And if there's not a lot of ownership…the things that you

> learn. The things that you bring with you, the potential for some sort of transformative change, is very small.

Ecologies of participation are one way of offering agency in a programme as participants can control how they attend and participate, but further considerations should be made in order to enhance the ownership and potential for change (or transformation). Facilitators can imagine the different motivations and use them as lenses to review and develop their invitations in order to cater to the human elements of participation (Farr, 2017). Ecologies of participation and providing permission in the event structure (such as messy changeovers between talks to allow people space to leave (Hayward, 2017) or open invitations to propose activities for the event at the start of the event (Poulsen, 2017) can begin to empower participants within the different degrees of the community.

Facilitators also must embrace that as the audience is never predictable or designable, that the outcomes of the event will be similarly unpredictable (Bearman, 2017; Poulsen, 2017). Programming can be compared, therefore, to play, in that a facilitator can design a structure but can only design activity indirectly, its results arise "out of the rules as they are inhabited and enacted by players, creating emergent patterns of behavior, sensation, social exchange, and meaning." (Zimmerman, 2003). This can have significant consequences for promoting the value of an event to potential funders (as discussed in the impact section of this document) but also requires that a facilitator have a plan, but think on their feet in order to embrace, support and help the emergent behaviours and meaning to develop and embed (Bearman, 2017; Thompson, 2017).

For the core and active groups within a community, supporting appropriation can be beneficial to developing their agency, investment and thus ownership over their experiences. Potential techniques include facilitating less to provide space for active participants to step in (Bearman, 2017), providing permission through facilitation style and overt invitations to contribute (Poulsen, 2017; Wiedemann, 2017) and through designing a programme which builds

confidence, moving from low risk high facilitation at the beginning, to high risk, low facilitation at the end, building confidence and empowering participants to take control (Poulsen, 2017).

4.0 Changes to Impact

In analysing the expanded data set, the identified impact of playful participation in social events is strengthened, with many facilitators supporting the claims in relation to the impact on the individual and local community and the impact on industry and society. No new routes of impact presented themselves across the data set and therefore, the impact remains as it was presented within paper A (table 17).

Impact of social play events on individual and local community
Building of confidence and new relationships to game playing and making practices through agency in participative levels Inspiring, expanding and motivating communities through programming, agency and enhancing social potential Providing spaces for experimentation, playfulness and potentially individual transformation
Impact of social play events on industry and society
Designing spaces which enhance the potential for cultural transformation of game making and playing practice Redefining the image of games socially and culturally to general and professional audiences Defining ways of positioning games authentically in social contexts to enhance their legitimacy Collaborative formation of culture through support, diversification and propagation of communities of practice

Table 17: An overview of the impact of social play events locally and more widely as described by the model of participation.

4.1 Changes to Challenges

The expanded data set similarly supported many of the challenges identified within paper A, with issues of sustainability, personal cost and lack of infrastructure being raised. Where greater insight was offered, these points are expanded below.

4.1.1 Personal Cost

The personal cost of running an event is further acknowledged across the data set, with three participants acknowledging that they are personally identified with the events that they facilitate and that at times, they question their motivations due to the workload, negative implications on morale and the very act of facilitation turning the thing that they care about into a chore (Bearman, 2017; Poulsen, 2017; Quack, 2017). Thompson (2017), similarly acknowledges the hard work and effort that goes into facilitation, but also points to the network of co-deliverers, invested community members and volunteers that go into making a CP event happen. The scale of these events mean that they are not connected to an individual, and the longevity of the event relies upon activating members of the community through apprenticeship techniques to help to facilitate and develop the events. The other events within this study are in no way facilitated by only one person, they too rely upon teams of volunteers, however, not to the same extent as CP, and there are perhaps valuable lessons to be learned from this approach which could help, if modified for each individual event context, to lessen the personal cost on the individual facilitator. A need for discourse and knowledge exchange between event facilitators is thus further supported by the findings of this research.

4.1.2 Sustainability

The data set suggests that sustainability is an issue for all events which are motivated by or around play. Positioning play, much like games, as a valuable undertaking for funders is problematic, especially for those who embrace the unpredictable nature of play, as they cannot guarantee the outcomes or impact of their work, which is a key factor in many funding applications (Bearman, 2017; Poulsen, 2017). Many of these events thus rely upon registration fees, in kind support or the “love” of operating the event (Thompson, 2017). An additional

issue presented itself, in that if an event runs with little funding support, it can be difficult to make the case to funders that funding *is* required, thus, making events happen through determination and perseverance can be a limitation to developing their future sustainability (Poulsen, 2017). In relying upon ticket sales, further detail was provided in that some of the interviewees referenced a need to balance accessibility to the event with the costs of running it. Events such as these can be seen as a "luxury" (Thompson, 2017) and thus when money is tight, people will not buy tickets. Therefore, a facilitator must ensure the events are affordable, value for money and recognise that their participants will hold them accountable if the event does not meet expectations, whilst being able to gather funding through ticket sales to aid sustainability (Dyce and Fairweather, 2017; Thompson, 2017).

5.0 Conclusion

In returning to the dataset, valuable detail has been provided in deepening the understanding of the four key design considerations presented by the original model. A fifth consideration was also developed, due to the promotion of agency and unpredictability which is presented by play as a form. The original model of participation was very focussed upon the design and facilitation of events which related to videogames as a form, the revision of the model, drawing from the additional five interviews has helped to diversify the understanding of these elements and enhance the transferability of the model, beyond video games, into the facilitation of playful events. Such enhancement in transferability is seen in the approaches to non-digital ecologies of participation (comfort and discomfort), the exploration of event expectations beyond the stigma of video games (niche and mainstream), the use of apprenticeship to enhance community integration (Insiders and outsiders) further considering purpose and promoting value (Curation and Gatekeeping) and embracing unpredictability in programming (Facilitation and Agency).

In enhancing the transferability of the model of participation, further dependencies and overlaps have become clear between the different design balances and considerations, and thus, a facilitator must seek to explore these five different considerations simultaneously in

planning, designing, delivering and reflecting upon an event. This model does not, like its predecessor, provide a one-size-fits-all approach, but rather promotes areas of consideration that should be explored in designing participation within an event.

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Appendix C: Detailed Evaluation of Publication A

1. Formation of trust

The revised model of participation aims to support the creation of a magic circle by balancing comfort with discomfort, thus creating a safe and welcoming space which builds trust and confidence to participate. In having a shared interest around the promoted subjects of the event, of being drawn in by the legitimacy developed through balancing niche and mainstream considerations, attendees can be seen to be apart together from the rest of society. The model is not limited in terms of whether the community is bounded or unbounded, and in fact, deals with the tensions of bringing a bounded community into an unbounded community through the insiders and outsiders consideration. This is not to say that the attendees all exist in one large community around the event, but instead, they exist as a series of micro communities who might come together in large or small groups motivated by the programming and social potential of the events.

Social contracts are implicit within the comfort and discomfort consideration of the model, with interviewees pointing specifically to 'safe space policies' (Pilia, 2017) which are an element of event social contract in terms of accepted and appropriate behaviour.

2. Supporting agency

The publication promotes a need for careful consideration by the context provider, of the specific communities that attend their event and their diverse needs. Designing from the needs of the community enhances their sense of value and potential for agency and thus transformation.

Play can enhance or exaggerate the aforementioned existence of micro-communities in an event, depending upon its design. Play, especially around games, tends to organise participants into set numbers of players (Wiedemann, 2017). Workshops with limited places similarly achieves such results. This can lead to separation and affect the creation of a cohesive culture

and shared meaning across the event. The model does not consider such cohesion, and rather promotes a balance between this and agency (the facilitation and agency consideration). Cohesion, therefore, should be considered further in relation to micro-communities in an event.

It is not necessary for each participant to be have an identical experience in order to get something out of an event (Benedetto, no date). Providing a diverse range of invitations (as acknowledged by the model) can allow participants to shape their own experiences and create an event that is right for them. This agency to form their own experience enhances ownership over their participation within the event. In terms of enhancing participation beyond existing micro-communities in an event, it is likely, that the diverse invitations will cause micro-communities to break apart as individuals attend different things and come back together, therefore, one participant may participate in many micro-communities over the course of the event, facilitated by ecologies of participation and diverse programming. The ecologies of participation element also leads to inherently experimentation with lenses and perspectives being embedded through playful participation.

This consideration also has implications for building trust (evaluative factor 1) as it taps into Wenger, Snyder and McDermott's (2002) claim that for cultivation of community, there is a need to develop both public and private community spaces, which acknowledges that interrelations will occur around a whole community and also parts of the community. This is deemed to be central to supporting community development and creating "aliveness" (Wenger, Snyder and McDermott, 2002).

3. Unpredictability of play as a design consideration

The model builds agency into participation design through the facilitation of unpredictable audience needs, appropriation and potential dark play. It is built upon consideration of the profile of the audiences attending the event and promotes that the context provider draws from their needs in the design process. The model also promotes that agency be embraced, and that where safe and possible, suggestions that come from attendees be heard and ideally

implemented. This, however, is more possible within an open event structure (e.g. A MAZE. / Berlin, Counterplay) than in a performative work (e.g. Blast Theory) where a designed outcome or communication of a message is planned. In the case of works which have a designed intention, but are participative, it is suggested that designing in areas of the work which are free-form or open (much like seen at Feral Vector for example) can allow participants to explore this, whilst ensuring that the invitation to continue is strong enough to bring them back to the experience. It is also suggested that building in spaces for participants to share their experiences and opinions is important to supporting agency and embracing unpredictability.

The aforementioned safe space policies and definition of acceptable behaviours within an event in its promotional material as acknowledged by many of the interviewees, tends to some extent to manage unpredictability of behaviour and outcomes within an event.

4. Emergent Issues and Gaps

The events which informed this research are motivated by an individual or small team that have an intention in facilitating social participation. This model recognises than in supporting agency of attendees to enact transformation, this may sit at odds to the context provider's motivation. The model asks context providers to balance the participant needs in line with their own interests, however, the findings of this research present a tension in the promotion of agency for transformation more broadly in relation to authorial intent which need to be addressed in design of a final participative framework.

The research also considers the position of the community and their interests in relation to the broader landscape of events and promotes diversity in event aims and facilitation to support potential communities which may not be supported elsewhere. This is a particular motivation of Feral Vector for example, however, Poulsen (2017) also suggests that diverse invitations are needed to invite participants who might not find the current invitations appealing. It is not possible within one event to please everyone (Pilia, 2007) therefore, different models for events may be required to reach different kinds of audiences.

5. References

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Appendix D: Detailed Evaluation of Publication B

1. Formation of trust

The practice-based work created in publication B focussed upon single player experiences and the discussion of the consumption of moving image. It thus focuses on the relationship between the viewer and the image, and therefore the formation of trust in the context of this research relates to trust between the author of the work and the participant. Trust is developed here through the use of thematic framing, which acts as a hook upon which the participant can begin to layer meaning. The naming approach, which is the key design technique in this case, invites the participant into the interpretative space and provides them with cues upon which they can begin to develop their own understanding of the meaning of the work. This is particularly true of abstract works, however, in considering the transferability of this approach, the thematic framing could relate to spatial positioning of an artefact within an environment (designed or otherwise), could relate to curatorial texts which accompany an artefact and frame it for the audience (Gramazio, 2017), it could also, in relation to interactive games, be the introduction screen, tutorial and guidance framework which invites the participant into the experience. These examples, although not exhaustive, suggest that this element is transferable and can provide helpful prompts for a participant to allow them to engage with the work.

The design techniques used implicitly relate to bounded play/interpretation situations where the player interacts for a limited time (i.e. the length of the game or performance). The focus of this framework on interpretative strategies make assessment of its consideration of the magic circle difficult, however, the social contract between the work and participant can be reviewed. The language of communication utilised by the work, and its conventions are core to building trust and engaging the participant in the experience. The design techniques point towards providing consistent guidance for interpretation, such as the thematic framing and use of identifiable techniques such as anthropomorphism, however, the design techniques also disrupt conventions by promoting contrasts and shifts in content and interaction modes in order to communicate with a participant. This disruption could be read as breaking the social

contract as such shifts change the rules of interpretation for the participant. However, it is in the application of these shifts that their disruptive or communicative potential is achieved. If the participant has been given time to engage with the experience and develop familiarity with its approaches, it is possible to add complexity to the communication in layers without disrupting the social contract of the experience.

2. Supporting agency

The use of metaphors to communicate meaning provide space for agency in interpretation. There is no one way to read a metaphor and the range of potential interpretations can encourage the participant to try on different lenses and ways of reading their experiences. As such, metaphors have the potential to lead to small scale transformation of perspectives. The space for interpretation, or possibility space (Spector, no date, cited in Jenkins and Squire, 2002) engendered by metaphor rather than narrative delivery of meaning is an invitation to participate in the work, allowing each participant ownership, to a small extent over their reading of their experience. This is true, only if, the work is designed with an open space of possibility to invite interpretation, rather than the meaning being pre-defined by the author.

Again, in considering agency, the intention of the artist and/or author can constrain the interpretative space and agency of the player. This is not to say that designed experiences which have a central authorial motivation are less engaging or participatory than more open spaces or that they are not capable of enacting transformation, rather, that in the context of this research, the transformation comes from the participants own experience and agency rather than it being motivated by the themes embedded within a work. The use of metaphor, thus, for developing active participants who motivate their own transformation, has to be very open to interpretation to allow the participant to make meaning for themselves and take ownership over their experiences.

The design techniques do embrace some approaches which are more authorial in approach than being open to the unpredictability of interpretation through play. The promotion of

content and interaction to focus attention is a particular approach which embeds authorial intention. In limiting the content on screen, the space of possibility for interpretation becomes more limited. Abstraction does not necessarily, in and of itself limit the possibility of interpretation, it can actually widen the space or allow people to more easily identify with the work (Rohrer, no date, cited in Jagoda, 2011; Hider and Simmel, 1944), however, limiting what is on screen gives the viewer fewer objects to interpret and thus less permutations in terms of interrelations and meaning. Within interactive work, however, it draws participant attention to gameplay (Rohrer, no date, cited in Jagoda, 2011) which, where if the game mechanics are being used as metaphors, can be effective in promoting agency through interpretation. Therefore, careful use of abstraction is suggested as an amendment to this framework, as is the removal of the elements which focus attention towards a particular meaning, in order to promote space for interpretation and enhance the transferability of the design techniques to other works.

3. Unpredictability of play as a design consideration

The design techniques for participation do not explicitly tackle unpredictability as a design consideration within artefact design, however, consideration of the issues between authorship and interpretation, (as previously discussed) showcases the potential for the design of interpretative spaces to embrace unpredictability given that the artist/author builds a wide enough space of possibility.

There is potential, with thematic framing, for a form of dark play to take place, motivated not by the participant, but by the author. In providing thematic framing for an interpretative work, the author creates a space of interpretation from which the participant begins to draw. An author can provide thematic framing which suggests one thing and create an experience which is based upon something else, or they could make use of framing which is purposefully ambiguous. Duchamp's readymade "the fountain" (1917) for example did just this by positioning an everyday object in an artistic context, it was reframed and thus re-interpretation and shifts in perspective were required by those who interacted with it. Such a playful approach

is a challenge to the social contract of the participative experience, but may, indeed, through such challenge, empower a participant to take ownership over the experience and create meaning for themselves.

4. Emergent issues and gaps

Like the thematic framing design approach, the metaphors for meaning approach is also underdeveloped due to limited technique being utilised or explored within the publication. This design approach is recognised to have potential in terms of encouraging participation through interpretation, but further exploration of its specific application is required in order to fully enhance its transferable qualities.

5. References

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Appendix E: Forever Falling Nowhere Documentation

Documentation of the performance can be found here: https://bit.ly/2qk5Yje

Appendix F: Detailed Evaluation of Publication C

1. Formation of trust

The performance as an artwork invited participation through interpretation of abstract movement and imagery in partnership with music within a bounded space. Disruption can be a beneficial tool for creating a sense of secrecy and community around an experience, and thus, the promotion of this element within the design framework, contributes to the creation of a magic circle or a sense of being apart together. FFN made use of an atypical industrial space aimed to disrupt preconceptions about the performance, promoting curiosity and enhancing the air of secrecy around the event (with which play is typically imbued (Huizinga, 1949)) and was occupied only by the audience and performers for the duration of the event. This approach combined familiarity with excitement (Wenger, Snyder and McDermott, 2002) in that the participants were familiar with the festival format and description of the performance (which motivated them to buy a ticket) but were also provided with the unfamiliar in terms of location and the use of a promenade style of performance.

The promotion of disruption, however, also challenges the notion of the creation of a social contract with the participants. In particular, this work, being presented as a promenade piece, broke the barrier between the participants and performers, with the performers moving through the audience spaces and even interacting physically with them at times. This braking of barriers occurred at the very beginning of the work and thus challenged the comfort levels of the participants in the space (as acknowledged by one third of the audience respondents) and in turn may have affected the creation of trust. Disruption, therefore, must be carefully designed and implemented. Within a community of practice, the introduction of new voices and approaches (i.e. disruption) is recognised to have potentially transformational effects (Wenger, Snyder and McDermott, 2002), therefore, it may be that this approach to disruption was unsuccessful due to its positioning in the structure of the work - perhaps if the participants had been given more time to develop trust and comfort within the space (which is necessary

for transformation (Benedetto, no date)) then this disruption could have led to experimentation with new perspectives and potential transformation. This, is of course, conjecture, however, the relationship between trust and disruption clearly requires balance in order to ensure participant comfort and engagement in participation through interpretation.

2. Supporting agency

The use of ubiquitous themes, (like publication B's design approach of thematic framing), provides a hook upon which the audience are invited to engage with the work. FFN is not a traditionally participative work, and thus, participants may have expected "delivery" of an experience due to its promotion as a performance (Bearman, 2017). Abstraction in movement, visuals and music aimed to reform these preconceptions and invite participation through interpretation, emancipating the spectator (Rancière, 2009). This invitation to participate can be seen as development of a social contract (i.e. relating to building trust) but can also help to develop agency, given appropriate application. Within FFN, the themes were not implied through naming, but instead through the use of movement, colour and sound, in syncopation with one another or otherwise to create positive or more negative associations for the audience. The framing was subtler in this case and was due to the culmination of many parts, as acknowledged by each of the audience respondents. These themes provided a space of possibility (Spector, no date, cited in Squire and Jenkins, 2002) for the participants to interpret the work within. The themes were very broad, and did not limit or constrain audience interpretation, as can be seen from the wealth of thematic descriptions provided by audience respondents. The use of ubiquitous themes also helped the participants to make an emotional connection to the work, as they were able to relate what they saw to their own experiences. A sense of ownership over their interpretation which led to personal connection and reflection occurs through the provision of an open and ubiquitous thematic space of possibility. Ownership over an experience can help it to leave an imprint upon the participants and in turn, lead to small transformational change (Poulsen, 2017).

Providing a sense of progression in an interpretative work can provide further scaffolding to aid and disrupt interpretation. Contrast and changes movement, imagery and sound can help to imply a change in mood, attitude or phrase, which whilst promoting a sense of progression, also provide further interpretative data from which the audience can draw meaning.

Again, like publication B, the use of metaphor in the work enhances the participants' ability to try different lenses for interpretation and develop different perspectives based upon the work. This, again, has the potential to lead to individual transformation of perspectives on a small scale. Unlike Publication B, which was a re-playable bounded experience, FFN existed as a bounded experience and was performed on one evening only, thus, although the space for interpretation was opened by movement as metaphor, there was no ability for participants to engage with the work beyond its initial performance beyond personal reflection. Although this was a bounded experience, there was a social event held directly after the performance and thus, serendipitously, there was a social space within which the audience could discuss their experiences, informally if they wished. Farr (2017) promotes providing debrief opportunities after an event to allow people to share their experiences and Poulsen (2017) promotes such reflective discussion as central to people taking ownership over their experiences.

Although these contextual factors are not within the designed techniques of this artefact, consideration of the facilitation or support of reflection may be a beneficial tool for artefact design. This view is supported by relational aesthetics which promotes that an art object should promote social exchange and spaces for "collective elaboration of meaning" (Bourriaud, 2002).

3. Unpredictability of play as a design consideration

Unpredictability of playful participation is not supported within the current design techniques promoted by this paper, beyond the unpredictability of the interpretation of the work by the participants. This was the focus of the academic publication; thus, the lack of further findings is not surprising. The artefact structure, however, may provide some valuable insight into further limitations in the design of this work to support unpredictability. The performance was linear, it

had a beginning, middle and end and the only space for participation was through interpretation, participants could not shape or alter the outcome or culmination of the artefact. It was less interactive than the other artefacts studied within this thesis and also is most closely aligned to a typical narrative structure. Therefore, in designing a possibility space, and thus supporting unpredictability, linear structures are perhaps not ideal vehicles unless some modifications are made (i.e. Farr's (2017) previously discussed suggestion to provide spaces in between key points to allow participant agency).

4. Emergent issues and gaps

The provision of a 'sense of progression' sits uncomfortably within the provision of agency. This limited contribution to agency may be attributed to the linear aspect of FFN and the addition of a sense of progression creates something like a traditional narrative arc. Sense of progression also implies a temporal quality within the artefact, which, in its traditional sense, limits the generalisability of this design approach to other kinds of artefacts. However, a case could be made that a sense of progression is evident within works which are not traditionally temporal, such as painting and sculptural works, where movement is captured in a static form (e.g. the work of Giacomo Balla or Umberto Boccioni). In relation to agency, this provides further interpretative levels for a participant. In non-linear forms, rewards can create a sense of progression and can enhance a sense of anticipation, causing participants to buy-in to the experience (Wang and Sun, 2011). A sense of progress thus can be related more broadly to making the value of participating the experience clearer to the participant. Value can be connected to a sense of satisfaction, positive feelings about the experience (Wang and Sun, 2011) and may, perhaps leave an imprint upon the participant beyond the play situation.

The focus on value also links to Wenger, McDermott and Snyder's (2002) cultivation of communities, and may further enhance the buy in of participants.

5. References

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Appendix G: Detailed Evaluation of Publication D

1. Formation of trust

Development cultures engaged a bounded community over a six-month period. This represents the longest playful intervention within the research publications, and thus provides valuable insight into the formation of bonds over a longer period of time, regardless of the bounded nature of the community. The resulting design techniques have much in common with Wenger, McDermott and Snyder's seven factors of community cultivation (2002) with direct parallels visible (table 18).

Seven Factors of Community Cultivation	Development Cultures
Open a dialogue between inside and outside perspectives	Diversifying community
Invite different levels of participation	Supporting ecologies of participation and shifts in participative modes Community Led Design and Facilitation
Combine familiarity and excitement	Managing expectations Disrupting Conventions and Fostering Creativity
Create a rhythm for the community	Supporting ecologies of participation and shifts in participative modes Community Led Design and Facilitation

Table 18: Comparison of the Development Cultures Design Techniques to the Seven Factors of Community cultivation (Wenger, McDermott and Snyder, 2002)

The project referenced concepts of communities of practice in its design and thus these parallels are of no surprise. There are, however, subtle differences in the design techniques promoted within Development Cultures. The diversification of community not only seeks to

temporarily invite members into the community to share their experiences and disrupt the conventions of the community, as is promoted by Wenger, McDermott and Snyder's model, but also seeks to invite members into the community permanently, making active recruitment and expansion in order to enhance practice and disrupt conventions core to the model of participation design. The expansion of community within the project was successful, however, the bounded nature makes it difficult to ascertain claims of ongoing participation by new members of the community beyond the four events in the project.

Expansion of the community in this way could potentially challenge the sense of being apart together or blur the boundaries of the magic circle in terms of who is aware of the shared meaning and value of the 'core' group and who is not. The scheduling of events, however, to allow spaces for reflection, and building social interaction in alongside participation in a friendly and welcoming space helped to share knowledge, promote a sense of camaraderie and maintain the magic circle within each event.

The design techniques for development cultures also promote agency more prominently than proposed by Wenger, McDermott and Snyder. The context provider in this case uses community trust building exercises to identify and design interventions which are motivated by the interests and needs of the community themselves. Similar to Benedetto's (no date) interest in capturing risk from a community to shape the design of a transformative event, Development Cultures captured needs and interests, using these to create challenges and constraints to motivate experimentation with different perspectives around game development, and potentially lead to participant transformation. This form of community driven design and facilitation helps to enhance participation and promote value.

The design technique to manage expectations addresses the creation of a social contract with participants. It helps to define the rules of play and participation and create a safe space for experimentation. Clear promotion of the purpose of the event and ongoing discussion built into the programming in reflective spaces in between highly participative events help to monitor

expectations, redefine the social contract and ensure a collective sense of meaning. Managing expectations also involves removing the pressure required to create something to a particular level, to have 'useful' results or to perform. The utilisation of existing formats, such as the game jam, help to establish a general consensus in terms of the expectations of the context providers and of the other participants, creating a safe space for participation. Existing forms are utilised as legitimising constructs (Dyce and Fairweather, 2017) and as invitations to play (Bearman, 2017) within participation design, and thus the game jam was utilised here as the most prevalent and appropriate model for the developing community to manage expectations.

2. Supporting agency

As previously discussed, needs and interests of the community were identified from discussion with the community themselves in order to inform the design and development of playful interventions over the project duration. Whilst this is not direct participant agency, the recognition of event design being led by participant needs aims to promote a sense of ownership over the experience in the participants and in turn enhance the potential for transformation through experience and learning which emerges being embedded into their practices, driven by this ownership.

The disruption of conventions and fostering creativity design approach promotes, once trust has been developed, the design of interventions which allow participants to try different lenses through playful participation. In Development Cultures, constraints were used extensively as lenses to focus attention on development of practice as was the use of space. The space for agency is limited overall in the application of these design techniques. The context provider created playful interventions in terms of application of themes, constraints, disruption of space and programming of different modes of participation to support community development and creativity. The project was successful in achieving both of these outcomes (to varying extents, as reported within the publication), however, the use of constraints to enact creativity limited the space of possibility for agency. This is acknowledged by one participant in the jump jam (which focussed the participant activity on the jump mechanic of games) who believes:

> Since the theme was more directly a mechanic rather than an abstract idea or notion I think it resulted in a more directed exploration of a particular range of genres and could perhaps discourage people from taking a more free-form approach to what they were designing.

The constraint in this case, for this participant, limited their agency and the diversity of outputs. Other participants appreciated the time to focus upon and reflect on a specific mechanic, however, the experience of this one participant points to a flaw in the design techniques for agency in that too stringent constraints or programming can limit the space within which participants can take ownership over the experience. Bearman (2017) believes, the less a context provider does, the more the participants have to fill in the gaps. If enough confidence and trust has been built within a bounded play community around an event, it may be beneficial to loosen designed constraints and provide spaces for participant improvisation (Poulsen, 2017; Wiedemann, 2017).

3. Unpredictability of play as a design consideration

The project created a "rhythm" (Wenger, McDermott and Snyder, 2002) for the participants, moving from lower levels of participation to build trust, through to higher levels of participation to encourage participant ownership and agency. Ecologies of participation such as this were key to supporting unpredictability in participant activity, as it provided space for participants to do as they wished within the event framework.

As previously acknowledged, the designed nature of the event and constraints provided a framework for participation within which participants had 'designed' agency. This framework was formed from identification of commonalities, issues and interests of participants in the initial workshop, and thus, the context providers embraced unpredictability in utilising these elements to shape future events and constraints. The resulting space of possibility within the designed framework was narrow, however, as it was designed to address these specific issues

and thus unpredictability emerged mostly in the final artefact that were created and in the social interactions between participants in the events.

4. Emergent issues and gaps

Participants did develop meaningful relationships during this event, with ongoing collaboration and differing levels of project development being initiated from the project, therefore, it was successful in creating relationships, building trust and developing agency for some participants, but not necessarily for others. Communities of practice, similarly are recognised to have three degrees of participation from core, through active to periphery (Wenger, McDermott and Snyder, 2002). This potentially points towards the differing levels of activity by the community after the bounded experience. Development Cultures did not provide any scaffolding to support participant activity beyond the end of the workshop schedule and thus the external motivation to continue activity was removed. However, some participants clearly found motivation to sustain activity beyond the realm of the bounded experience, and perhaps could be positioned as the more engaged or leading participants. Developing agency is a community is important, however, in enacting collective transformation and potential action, and therefore, should be considered further in relation to the final framework.

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Appendix H: Detailed Evaluation of Publication E

1. Formation of trust

This publication draws heavily from communities of practice and thus, again, similarities can be seen between the design techniques and Wenger, McDermott and Snyder's model for cultivating communities (2002). The development of trust and use of disruption in this project echo combining the familiar with the exciting, whilst each stage supports the invitation of different levels of participation. The disruption aspect also invites new voices into the micro-communities which from within these events and fosters cross-fertilisation of communities, especially within facilitated aspects. The context provider's toolkit considers design for evolution in the final stage, creativity and innovation. This approach also acknowledges the private and open spaces to some extent, allowing micro communities to form, to cross fertilise and to come back together in periods of reflection as a larger community of practice. This allows trust to be developed further through wider social participation and interaction in small group and whole community settings.

Social contracts and trust are key to the first stage of the toolkit, which seeks to provide a shared language and an understanding of intentions in the early stages of participation. Formation of such an understanding clearly draws a magic circle around those within the participative event and begins the exploration of temporary community formation through discourse, playful participation and reflection within the following step (disrupt) of the toolkit.

2. Supporting agency

Like publication D (potentially due to project overlap), this toolkit promotes the use of constraints to disrupt practice. Constraints, as previously discussed (appendix G) can be useful for shifting lenses of interpretation and offering different ways of looking at the world. The can also limit the space of possibility and should be applied carefully.

The toolkit is designed in four stages which move from design of participation being led by a context provider to the participation being motivated by the community (but still facilitated by a context provider). In this model, agency is thus developed in terms of building confidence, through participation for individuals to take more control over the activity and level of contribution. Neither project studied within the publication successfully achieved this outcome, however, techniques such as inviting the participants to draw up plans for future developments (as described within this research), do help to begin transition of facilitation from the context provider to the participants. Handing a level of agency over is deemed to be important to enact transformation through participation and is important should a bounded community wish to transition to an unbounded community beyond the limitations of the facilitated event.

The toolkit makes extensive use of reflection, both within participation and around participation, supporting different participative modes and also allowing for the "collective elaboration of meaning" (Bourriaud, 2002) around an experience. Such reflection helps the participants to make sense of their experiences, develops their sense of ownership over what they have experience and in turn can evoke transformation but can be difficult to facilitate to the same extent in shorter events, and thus must be scaled to suit the specific event context.

3. Unpredictability of play as a design consideration

The toolkit, in the reflect design technique, also recognises unpredictability in raising "areas of tension" for discussion. Tension may present itself due to disruption of shared (or individual) values and meaning (Wenger, 1998) or through appropriation or dark play. The reflection aspect of the model encourages discussion around such tensions to explore their implications and develop participation based upon the outcomes.

The toolkit in itself is quite non-prescriptive about programming or levels of constraint applied in later stages, and thus has the potential to support and react to unpredictability which presents itself. For example, the model promotes drawing activities and next steps from the community which like the application within publication D may limit agency, or could be applied

in a way that the context provider stands back and allows the participants to take charge for themselves, deciding when to step in and provide support or when to let them struggle, in order to develop ownership, agency and potentially transformation (Bearman, 2017; Benedetto, no date).

4. Emergent issues and gaps

The toolkit relies upon ongoing participation and would be difficult to apply in a one-off or shorter event, especially in regard to the time taken to assess the needs of the community, develop activities in reaction and support their reflection. The model thus, requires some revision in order to be transferable across different event types, and the proportional use of these aspects should be at the discretion of the context provider, to suit the needs of their communities. The building of trust is directly tied to determining the needs of the community and also helping them to understand one another's needs. In a short two-hour workshop, such participant-led activity may not be possible, but reflection upon the activity for the last 15-30 minutes to collectively make sense of the experience might be. A context provider should therefore think about which steps are most effective for their format to give the participants the best invitations to participate, meet their needs and provide them with valuable experiences which can shift and develop their perspectives beyond the event itself.

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Appendix I: Detailed Evaluation of Publication F

1. Formation of trust

The design techniques within this publication can broadly apply to bounded or unbounded communities, and like many of the publications, shares qualities with Wenger, McDermott and Snyder's factors of community cultivation (2002) but this is aimed only at unbounded community development. The design approaches align to their promotion of different levels of participation, focusing on value and combining the familiar with excitement. The promotion of the concept of social objects within the publications, helps to promote social interaction around objects, inviting a bounded approach to a dialogue between inside and outside perspectives. In this model, the concept of micro-communities within a space is central to facilitation - invitations are provided to bring micro-communities together, through participation and play to allow for social exchange and the potential for new perspectives or lenses to be explored. Curation of a participative space, and consideration of design techniques which focus on meeting the needs of the community help to create a rhythm for the community, perhaps not in the unbounded sense promoted by the community cultivation factors, but certainly across and within a single event experience. Providing different rhythms in an exhibition setting is seen to enhance participation across diverse audiences and also considering their shifts in participative modes during a ludic experience (Dyce and Fairweather, 2017; Gramazio, 2017).

The design themes are informed by gallery and museum approaches and thus have flexibility to embrace the ever-changing audience which moves through a space. Therefore, the themes, through embracing accessibility and possibility spaces supports the flux of participation and provides flexibility, but perhaps at the cost of the magic circle. The reliance upon micro-communities promotes a sense that each community will have experiences together and thus form their own magic circle around each invitation to participate. These micro-magic circles create a sense of being apart together for the participants, but limits cross-pollination from community to community to evoke potential exchange. Design themes proposed by publication A in terms of considering programming and ecologies of participation can promote further

cross-pollination, and in developing design techniques which are transferable across different contexts, could be supported in a festival structure (as publication A), in a conference, in a museum (as promoted within this publication) or in a workshop setting (Publication D and E). Such diversification of experience through participation across micro-communities (pre-formed and event formed) helps to create individualised experiences, which is a key factor for transformation (Benedetto, no date).

2. Supporting agency

The design themes in this publication supports bounded communities in providing emancipatory approaches for meaning making and participation through handing over authorial control and using the unpredictability of play. These design themes suggest that the subject matter would be provided by the context provider, as would be a series of invitations which utilise play and social objects to enact participation. The meaning drawn from these experiences would then be explored together by the participants, possibly within their micro-communities or possibly in facilitated discussions and workshops by the context provider.

Although this model lets go of some authorial control, embracing the possibility of play, it is likely that social exchange will be motivated firstly by the social objects that have been selected (i.e. there is still some authorial input and promotion of value in selection of materials) and also around the other designed invitations to participate (i.e. selected by the context provider and designed by invited experts). The selection of materials therefore, to fully enhance and embrace the possibility space of participation, need to be open and ambiguous or to provide provocations for the participants to react to in order to potentially widen their horizons. Such an approach will invite greater participation in meaning making and thus allowing participants to take ownership over their experiences and learning.

3. Unpredictability of play as a design consideration

The model was designed for museum and gallery spaces and thus embraces unpredictability in attendee population, motivation and interest. It promotes a wide range of activities to attract different audiences and engage them in meaning making, but, unlike the other models which focus on a set community, this model acknowledges that a community in a public space is always in flux and thus through more permanent invitations to play (i.e. exhibition) and temporary invitations (i.e. workshops) supports the flow and interests of this diverse, ever changing grouping.

Gramazio (2017) recognises the difficulty in participatory positioning of artefacts in gallery spaces, suggesting that if something can be broken it will be. It is difficult to define and determine behaviours of participants especially when play is used as the tool to bring them together, and thus facilitation of playful social objects requires invigilation and support to ensure the exhibits or invitations to participate stay in working order, regardless of the dark play of attendees (Gramazio, 2017).

4. Emergent issues and gaps

The design techniques are drawn from a focus on inviting participation within a designed space which is more permanent than those discussed within the other publications. The techniques utilised, however, have much in common with the techniques promoted across the other publications which focus upon participatory design for events, and these techniques in fact provide valuable advice on the support of participation for an ever-changing audience. It also openly acknowledges the need for authorial control to be relinquished to some extent and under further investigation, points towards some potential techniques for this to be achieved. The model, could benefit from promoting the authorial tensions more prominently, as evaluation of this publication and the entire body of work suggests that this is a particular tension which has not been fully addressed by the existing design themes, therefore, it is suggested it be promoted to a fifth design theme for consideration in the final framework. This

promotion is also supported by the recognition of authorial tensions across the other publications within the study.

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Appendix J: Ola De La Vida Documentation

Documentation of Ola De La Vida can be found here: http://oladelavida.com/

Appendix K: Detailed Evaluation of Publication G

1. Formation of trust

ODLV builds trust in a bounded play community through supporting spectatorship, in many forms. The game invites participation best when potential participants can watch it being played. This helps to clarify the expectations of the game, build trust, allow participants to develop strategies and build confidence to play and develop a social contract. The social contract, however, is unpredictable to an extent, due to the multiplayer nature of the game. Some participants acknowledge that having co-players who do not understand or cannot achieve their goals would affect the play experience for them, and thus, the contract of a fun, light-hearted experience could be broken by poor play of others. The dependencies designed into the digital game make this a factor, however, the promotion of spectatorship, use of mimetic controls and the building of narratives around the game (Isbister, 2010) that this produces, aims to lower the barrier to entry of the game and limit misunderstandings of its control by participants.

Evaluating the design techniques against the properties of community cultivation (Wenger, McDermott and Snyder, 2002), demonstrates that ODLV takes many steps to support a temporary play community. For example, supporting spectatorship and promotion of semi-spectatorship promotes dialogue from inside and outside the community and also private and public spaces (i.e. discussion in gameplay through semi-spectatorship and discussions between spectators separate to the play experience). The physical hardware, Wii balance boards, maracas and poncho combine familiarity with excitement, the excitement being the unusual combination of these elements in a multiplayer experience. This excitement is further exaggerated by the creation of spectacle and play as performance as design techniques.

The magic circle is a central design technique for ODLV which aims to use spectacle, physical design and spectatorship to broaden the magic circle beyond the participants in the play experience, inviting spectators to become active agent through commentary, support,

observation of play and coaching. Varying levels of these activities were reported by players in testing, however, they are all evident to some extent and thus the game succeeds makes steps to widening the magic circle, blurring the boundaries between players and spectators to create a broader play community which is apart together form the rest of the social play situation.

2. Supporting agency

The digital game play is authored, and the overall goals and structure does not change based upon player input. The digital gameplay, however, does not aim to provide a particular message or sense of authorial intent to the player, rather it provides a physical challenge to the player to manipulate their bodies in the real world in order to get the digital world to adhere to their wishes. The game feel and physical occurrences it motivates however does not limit the agency of players, as can be seen by the level of "gestural excess" undertaken by players(Simon, 2009), some of which relates to affecting on-screen game play and some of which relates to their own relationships with moving their bodies and the festive atmosphere create by social the play situation.

The game provides an additional constraint in requiring physical cooperation between three people. How players choose to achieve this, whether through democratic verbal discussion in play or physically repositioning their co-players to reach their own goals, is up to them. In play, therefore, players reveal a great deal about themselves and open up spaces to form new connections, camaraderie and social bonds. They also have agency in choosing play style and their co-players, which can provide them, to an extent, with a limited sense of ownership over their experience.

ODLV encourages a different lens to other play experiences in its appropriation of existing hardware for co-operative play experiences. Its use of costume and props also differs to many digital game experiences, and its reliance on physical cooperation also disrupts conventions. In this way it presents participants with a range of levels of novelty in its physical design and play which can offer a new lens on what digital game play can be or the ways in which digital games

can blur boundaries between the digital realm and the physical which is a promoted approach to the creation of "engaging social digital play experiences" (Garner *et al.*, 2013). Many participants comment on the physical nature being very appealing both in play and in watching, therefore, it clearly is a unique feature which potential expands the perspectives of those who play.

3. Unpredictability of play as a design consideration

ODLV supports unpredictability in play through its physical design. The aforementioned gestural excess encourages participants to try out all sorts of different physical positions and interrelations with one another in order to enhance their play experience. ODLV also showcases the emergence of competitive nature of players and an appropriation of the positive and collaborative nature of the game. The game does not actively promote high scores, however players in the focus groups would watch to see if anyone could better their score and openly criticised the play performance of players. Dark play also presented itself in focus groups, with some players suggesting that they did not want their co-players to win, and thus would not pass the piñata over to them. This idea of individual players 'winning' in a collaborative game is not at all encouraged by the game, but instead is a subversion of the social contract of the game driven by individual player motivations (Schechner, 1993). This approach was acknowledged by less that 10% of focus group attendees, however, it does represent that the game has space to support appropriation and dark play, but not necessarily to the benefit of all players.

4. Emergent issues and gaps

ODLV enhances participation in the game through spectacle strategies and through supporting different levels of participation. It provides opportunities for transformation of interrelations between players in evaluating play performance and also of participants' views on the physical play experience of video games as a form. In order to achieve many of these outcomes, novelty is a key approach which is not fully acknowledged by the existing design techniques and it is suggested that this be promoted for consideration in participative artefact design.

The use of spectacle and spectatorship as strategies to enhance participation work well for a physical multiplayer game such as this which has no authorial intention other than drawing attention to the physical interplay between players and achieving a sense of temporary bond. These strategies, however, may not be appropriate to single player experiences which require more active engagement with the content of artefact or which deal with more serious themes, thus the transferability of this element is in question. However, the design framework aims to create social participative experiences and thus, consumption by multiple people simultaneously is a core requirement. Some experiences do exist which deal with 'sensitive subjects' in a social play space, for example, In Tune (Tweed Couch Games, 2015), which explores sexual consent. It may, however, be beneficial to add consideration of theme for social consumption to the design techniques considered for participative artefact design in order to support an artist in exploring the extent to which their subject is appropriate or can be made appropriate for consumption by many players at once.

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Appendix L: NLC Documentation

Documentation of NLC can be found here: https://bit.ly/2v2eU1u

Appendix M: Detailed Evaluation of Publication H

1. Formation of trust

NLC formed a bounded play situation bringing people together for a one-off event. The use of the ceilidh tradition managed participant expectations in terms of the levels of participation that may be involved and also created a social contract around the event structure. In terms of the artefacts within the event, these provided excitement in the familiar (Wenger, McDermott and Snyder, 2002), were an augmentation of the traditions of the ceilidh and enlivened participation and a sense of connection to the event. Each artefact offered its own magic circle, which was available to participants either throughout the evening (Peep-board, interactive sphere) or semi-permanently (live visuals for the duration of dances) or temporarily (interstitial animation to mark a sense of progression). The scarcity of access to some of the artefacts created spectacle and a sense of excitement, with many participants recalling the live visuals or interstitial animations more than the artefacts which were available for the entire event. Pilia (2017) acknowledges in event design that scarcity makes people more likely to attend and participate as they do not want to miss their opportunity; this may also be the case in artefact interaction within an event.

The participants which gathered around the artefacts in NLC were a mix of pre-formed micro-communities and individuals. The participants of Dare to be Digital (DtbD) were a rather large existing community who had formed social bonds through shared experience of the competition and attended NLC together. Within NLC, however, the artefacts provided some cross-pollination of micro-communities with participants suggesting they talked to people they did not know about the brooches or visuals when spectating the dances. The artefacts thus, provided space for social exchange and the invitation for outside voices to contribute to micro communities suggesting temporary development of community thinking (Wenger, McDermott and Snyder, 2002). The novelty of the artefacts, the physical quality of the brooch, the convivial and celebratory nature of the interstitial animations and the abstract and interpretative quality of the live visuals positioned them as social objects (Engeström, 2007) which invited social

interaction and “collective elaboration of meaning” as acknowledged by 55% of the participants. This interaction between micro-communities widened the magic circle, inviting greater participation in play and exchange and developing a sense of being apart together (Huizinga, 1949). The ceilidh event, drawing from tradition, and its setting drew a magic circle around the participants.

In considering community cultivation further, NLC provided value through artefacts (Wenger, McDermott and Snyder, 2002): each participant was given a brooch to keep, which created for some, a sense of being “in the club” and for many acted as a memento from the event (89% of respondents still had their brooches almost 12 months after the event). Value was also promoted through social interaction and collective meaning making (as discussed above) which also enhanced participants agency. A rhythm (Wenger, McDermott and Snyder, 2002) was also created for the community through the permanent, semi-permanent and temporary quality of artefact design and the programming structure of the event to manage energy levels.

Participation and social interaction, thus a sense of temporary community, was also enhanced overall by leveraging the existing constructs of the ceilidh. Ceilidhs depend upon partner and group dancing, and thus, bring people together naturally. For those familiar with the tradition, there is a sense of responsibility to pass on their knowledge to others, and the ceilidh in general, as a ritual, carries an air of participation and conviviality which encourages people to take part regardless of their expertise in relation to the dances. These qualities were widely acknowledged by participants. Harnessing such ritualistic qualities could be beneficial for enhancing participation in events or around designed participative artefacts.

The artefacts too built on existing models, the animation and live visuals drew from night club video jockey (VJ) traditions and thus enhanced the festival atmosphere of the event. The combination of known models with appropriation of unusual forms, ‘interactive’ jewellery added excitement to the familiar, further enhancing the community aspects of the event and also providing new lenses through which participants could view the ceilidh experience.

2. Supporting agency

As previously discussed, the use of brooches as a motivator for live visuals and interaction provided a sense of novelty to the event which invited new lenses for interpretation of the artefact and the event. The resulting outcome of the digital mediation, live visuals, animations and the brooch in the event delivery was not only an opportunity to experiment with different lenses but also a general transformation of the behaviour during the event and view of the ceilidh in relation to the audience. 44% of participants said they were more active and participatory at the ceilidh than they would be typically in a ceilidh event and 56% acknowledged that it helped the ceilidh tradition to feel more relevant to them.

The artefacts clearly contributed for some to temporary and more permanent transformation of behaviour and perspectives but this, it must be acknowledged, may be because all of the participants questioned had an interest in digital technology in their professional lives and thus, digital mediation is likely to have a positive impact upon their sense of connection to an event. Novelty, is a key factor in the designed mediations; the positioning of unusual elements within a setting, and therefore, may provide a more transferable design technique suitable for a range of audiences. Designing novelty or combining unusual design approaches in artefact creation it thus promoted for further consideration within the final framework due to its ability to enhance curiosity and perhaps lead to behavioural or perspective transformation.

Agency was supported in NLC through the aim of the artefacts to enliven the participants as media. All of the artefacts required interaction to unlock their potential, and thus relied upon the participants to be enacted. This invited unpredictability of participant behaviour, particularly in the live visuals where some participants acknowledge modifying their movements in order to 'play' with their influence on screen. However, these modifications of movement and the agency they evoke were temporary distractions from the main action of ceilidh dancing, and the novelty soon wore off, with majority of participants returning their attention to dancing.

The complexity of ceilidh dancing, and its social nature means that for many participants, it was not possible to be actively engaged in dancing and aware of their effect on event co-creation. Agency in co-creation was therefore temporary or created passively as a by-product of ceilidh dancing. Much of the design of the live visuals considered the patterns of ceilidh dancing and used these to create appealing visual augmentations therefore, the co-creation was still appealing as a by-product, however, agency was not clear or engaging enough to lead to behavioural change within the event. However, the main aim of the experience was ceilidh dancing, therefore the augmentations did not detrimentally effect this for participants but did enhance the spectacle for spectators watching both the dancing and its digital representation. In designing participation in artefacts, the complexity of the participative activity thus has to be considered as does who the product of participation, and its appreciation is aimed at. Often in participatory design around an artefact, the appreciation is aimed at the participant, but within NLC it was directed towards the spectator. This presents interesting tensions between participation and spectatorship which should be considered as a balance in the final participatory design framework.

3. Unpredictability of play as a design consideration

The artefacts existed with within the event with very little framework for interaction, and thus participants were required to experiment with them in order to see what effect they had. For the live visuals and brooches, this had mixed results, with one third of respondents not realising that they were having any effect. Providing guidance towards the participatory nature of these artefacts may have enhanced active participation.

As an event, the development of community (pre-formed and event formed across micro-communities) created a sense of belonging between participants which allowed appropriation of the ceilidh tradition to take place. High fives became common in dances which involved the whole community and the design for evolution supported by the event by it building to a crescendo at the end (through build up band activity, selection of dances and, tone of interstitial animations) led to the emergence of a dance off between the participants and the

professional dancers who were teaching dances throughout the night. This was an unpredictable, un-designed outcome, a form of appropriation which represented ownership over the event, collective action and agency. This was likely achieved through fostering the pre-existing micro-community around DtbD, the convivial nature of the evening, the ritualistic and liminal quality for many of the participants and the influence of alcohol lowering participant inhibitions.

4. Emergent issues and gaps

The framing of NLC as an artefact rather than an event provides some complications in drawing findings. The design techniques applied within the publication relate to both the design of animations and live visuals and the design of a participative framework in an event setting. In reviewing the event aspects of NLC, the design techniques used align very closely to those promoted by publications A D, E and H, particularly supporting ecologies of participation and leveraging existing social contexts. NLC thus provides additional support for these design techniques in supporting participation in events. NLC, however, was imbued with ritualistic qualities through not only references to tradition, but also as being set at a transitional time for many of the participants. The use of ritual as a participative design technique demonstrates some promise which could be considered under leveraging existing social contexts.

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